DOCUMENT RESUME

ED 067 014 HE 003 315

AUTHOR	Mayhew, Lewis B.
TITLE	Reform in Graduate Education.
INSTITUTION	Southern Regional Education Board, Atlanta, Ga.
REPORT NO	SREB-Monogr-18
PUB DATE	Apr 72
NOTE	185p.
AVAILABLE FROM	Southern Regional Education Board, 130 Sixth Street, N.W. Atlanta, Georgia 30313 ($3.25)
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Curriculum Development; *Educational Change; Educational Development; *Educational Planning; *Graduate Study; *Higher Education

ABSTRACT

This monograph is concerned with changes, innovations, and reforms in graduate education in the arts and sciences. It was written as an aid to faculty and administrators who must plan graduate programs in the future. While it does make suggestions and recommendations, it is chiefly intended to raise questions and to suggest ways by which graduate curricula may be examined and changed. Thus the book stands as a connecting link between the body of serious but unsystematic criticisms of graduate education of the past and what may become a thorough analysis of actual change of graduate education in the future. (Author/HS)

ED 067014

REFORM IN GRADUATE EDUCATION

SREB RESEARCH MONOGRAPH NO. 18

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Southern Regional
Education Board
130 Sixth Street, N.W.
Atlanta, Georgia 30313
1972
$3.25

FOREWORD

Professor Lewis B. Mayhew's review of prospects for reform in graduate education brings together several long-time SREB concerns cast in the general context of current educational stocktaking. The Board has served graduate education in the South when it has needed bolstering; it has served graduate education when it has needed modification; it strives to serve graduate education today when there is reassessment of basic approaches.

Previous SREB publications by Professor Mayhew are *The Collegiate Curriculum, An Approach to Analysis* (1966), *Innovation in Collegiate Instruction: Strategies for Change* (1967), *Contemporary College Students and the Curriculum* (1969), *Changing Practices in Education for the Professions* (1971). These all deal with curriculum change in the various sectors of education, but his present analysis, which concerns changes in graduate study, reveals by far the most inertia and inflexibility within the educational establishment.

Traditionally, graduate education has been emulated by all of the other parts of postsecondary education, precisely because it best typifies pursuit of the dual mission—advancing new learning and transmitting existing knowledge—by which education generally seeks to serve society. By the same token, change may come most slowly in graduate education because its purposes impose tighter constraints within which it must operate. But each part of education learns from the others—and this is an exchange which operates between equals. The unique functions which graduate education performs should not inhibit its capacity to learn from undergraduate education, professional education and, for that matter, elementary and secondary education.

WINFRED L. GODWIN, *President*
Southern Regional Education Board

PREFACE

This fifth in a series of SREB monographs dealing with curricular matters in higher education has proven the most difficult to write. For the three dealing with the undergraduate curriculum there was a reasonable body of systematic research, experimentation and theory upon which to draw in formulating guidelines and models. Within most of the professional schools there is ferment concerning the purposes and methods of professional education which became visible in reports, conference proceedings and monographic literature subject to ready analysis. However, with graduate education in the arts and sciences a different picture emerges. There is abundance of criticism and a plethora of heuristic recommendations. These for the most part are made by others than graduate faculty members. But actual experimentation is difficult to discover and systematic evaluation of experimentation virtually unavailable. Thus this monograph is considerably more inferential than have been the others.

However, in aggregate, the criticisms, recommendations and beginnings of experimentation present a consistent picture which, when combined with reforms in undergraduate education and professional education, suggest desirable and likely modifications in graduate education.

This monograph, as was true for the others, was written as an aid to faculty and administrators who must plan graduate programs in the future. While it does make suggestions and recommendations, it is chiefly intended to raise questions and to suggest ways by which graduate curricula may be examined and changed. Thus the book is in no sense a definitive statement. Rather it stands as a kind of connecting link between the body of serious but unsystematic criticisms of graduate education of the past and what may become a thorough analysis of actual change of graduate education in the future.

Work on these five monographs has deepened my own awareness of serious and unresolved curricular issues at all levels of collegiate education. At the same time it has convinced me that systematic and even theoretical formulations are possible and that curricula building can become a rational undertaking.

I cannot end without giving high praise and thanks to the officers of the Southern Regional Education Board for stimulating and sponsoring these monographs. Winfred L. Godwin, William O'Connell and E. F. Schietinger have been magnificent collaborators—helpful but not restrictive, insightfully critical but open to persuasion and, above all, encouraging for what has proven to be work in relatively uncultivated fields.

LEWIS B. MAYHEW

Stanford University
April 1, 1972

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PROLOGUE

This monograph is concerned with changes, innovations, and reforms in graduate education in the arts and sciences. It was intended to be a companion volume for the monograph *Changing Practices in Education for the Professions*, which explored common attempts to change or reform professional schools. But it quickly became apparent that despite continuing criticisms of graduate education in the arts and sciences in the polemical literature about higher education, actual change, innovation, or efforts to reform were not nearly so evident in graduate schools or divisions of arts and sciences as was true in the professional schools.

A number of reasons explain this inertia and why graduate education in the arts and sciences seems less responsive to criticism than are the professional schools. First, and probably most important, the professional practice of a physician, lawyer, architect, engineer, or even businessman is much more visible to the public and more open to public scrutiny and public pressure. Faculties concerned with the preparation of practitioners therefore have a very real professional and economic stake in public regard for practitioners. They react more quickly when changes are urged than would faculties of arts and sciences, who are essentially preoccupied with producing additional members of those same faculties. Thus, when public outrage over presumed impersonality or lack of humaneness in medical practice reaches a sufficient level, medical schools revise curricula to reinsert a concern for human beings in the education of medical practitioners. When the public discerned that the specialized nature of legal problems required more specialists and fewer generalists in law, law schools moved to provide for the desired specialized training, even if that meant eliminating the historically admired, highly prescribed legal curriculum which culminated in passing the bar examination. When employers sensed that engineers prepared in an essentially

engineering science program were unable to function effectively on a job, their demands that schools of engineering reintroduce applied work early in the engineering curriculum were heard and responded to. But the larger public rarely knows and seemingly cares little about the effectiveness of what historians do or how they teach history, how psychologists conduct and teach about experimentation, or how economists derive a set of abstract mathematical models. In many respects, it is only the result of two major pressures during the late 1960s which has awakened faculties in arts and sciences to the potential need for change. One pressure, of course, was the student protest movement, especially when graduate students added their voices to those of undergraduate dissenters. The second was the new depression in higher education which has called in question how educational dollars are in fact expended.

A related reason for apparent lack of responsiveness has been that innovation, change, or reform has simply not provided a payoff for graduate faculty members. Indeed, during the late 1950s and 1960s there appeared to be a substantial reward for professors to perpetuate traditional modes of graduate instruction. The presumed close relationship between professorial research and graduate instruction, once general affluence permitted, allowed for a substantial reduction in teaching time. Also, since graduate instruction, especially in seminars, was presumed to be highly demanding, professors who taught such courses claimed and received quite low teaching loads, which enabled them to spend more time on work of their own choosing—and institutions also profited.

Considerable national prestige adheres to graduate education, and during the 1960s institutions most deeply involved were the most highly regarded and most favored financially. In addition, large graduate enrollment provided a low-cost labor force which could man lower-division class sections paid for at a higher rate through tuition and benefaction on the one hand or state formulas for full-time-equivalent students on the other. The excess between amounts received for lower-division instruction and amounts expended for teaching assistants and nondegreed instructors could be used for other institutional activities, including the support of a great deal of individual faculty research. Outside of a few minor psychic rewards, most of the suggested changes in the nature of graduate education provided no incentive for professors to adopt them. It could be, for the most part, immaterial to professors whether or not students finished early or late; indeed, in some departments, keeping graduate students around for long periods of time while graduating few Ph.D.'s produced the manpower needed to maintain and finance large

undergraduate enrollments and at the same time limited the competition from Ph.D. recipients. Since so much college and university budgeting is based on student enrollment and is assigned to individual departments, there was no financial incentive to encourage students to take work outside a department. In fact, there were strong pressures to *limit* student enrollment to the department of the major for this financial reason.

Language requirements also were slow to change. Even though language requirements could be generally shown as spurious, they represented a unique hurdle which could limit the output of advanced degree holders while still allowing a burgeoning enrollment of students. Some of the same phenomena occur in the professional fields, but there is a clear impression that professional faculties—much more closely related to actual practice—are aware of payoff for changed instruction or else actually receive rewards themselves for changed educational practice. Thus the opportunities for additional remuneration in the form of consulting or teaching summer sessions may be associated with the somewhat greater receptivity toward continuing education on the part of some professional faculties than is true of the faculties in arts and sciences.

Another reason for inertia is that graduate deans, unlike deans of professional schools, have little power or authority. Within American higher education, innovation, change and reform normally result from administrative officers sensing a need and then, through persuasion, coercion, or the manipulation of an economic base of power, leading faculty members to make changes in practices. Deans of professional schools have the power to exert management control over a budget, to recommend appointments, to exercise administrative responsibility in personnel matters, and to influence curricular decisions if necessary. The graduate dean generally has no control over faculty, over faculty appointment, or (with a few exceptions) over admission of students; he has no budget outside of a slight administrative budget for his own office and a discretionary budget when he is allocated portions of contract research overhead funds and the like; and he has no administrative organization by which his ideas can be quickly implemented.

Then, too, lack of clarity of purpose contributes to the lesser responsiveness of graduate faculties in arts and sciences than is true of professional faculties. Although some professional schools may waver between favoring the production of academics and the production of actual practitioners, the reputation and viability of a professional school ultimately will depend upon producing a substantial number of people who can practice a profession. Thus the law

school knows that a large majority of its students must pass the bar examination; a school of medicine knows that it must place its graduates in appropriate internships and residencies and that its graduates must ultimately qualify for state licensing and for the various specialty boards; schools of education, although much less rigorously scrutinized, still must be conscious of and to a large extent governed by successes or failures of their graduates to be granted credentials by the state, to find appropriate jobs, and to function in them effectively. No such clear purpose operates within the graduate fields in the arts and sciences. There is uncertainty as to whether programs should produce future research workers, college teachers, or practitioners. Even if there is general agreement, as there is in some graduate schools, that the purpose is to produce research workers, there is little agreement (except in a limited number of fields in the natural sciences) as to the specific purposes or nature of the research the graduate will be expected to perform. With uncertainty of purpose and no great student or graduate demand for changing practice, graduate faculties have little incentive to modify their educational behavior.

Chapter 1

THE SETTING

Graduate education in the United States is a paradox: A characteristic mode of graduate education evolved early and has persisted, yet that same mode has been subjected to almost continuous criticism expressing strident calls for reform. Much of the controversy has centered on the purposes of the Doctor of Philosophy programs. If they are to prepare college teachers, why the heavy emphasis on research? If they are to train research scholars, why should the Ph.D. be a "union card" for college teaching? Since so many dissertations appear excessively long and preoccupied with esoteric minutiae, why maintain the fiction of an original contribution to knowledge and why not substitute some more relevant requirement in lieu of the thesis? If the foreign language requirement, tenaciously maintained by faculties, is not an essential tool for research and scholarship, why not eliminate it or determine a more appropriate language requirement?

The Emergence of Graduate Education

Within thirty years of the awarding of the first American Ph.D. degree, the practice of graduate education achieved a characteristic mode from which it has deviated only slightly in spite of the questions raised. Indeed, the authorization for that first Ph.D. awarded by Yale in 1861 established several of the elements which have persisted and perplexed over time. At that time it was decided that the degree would follow the usage of German universities and be called a Doctorate of Philosophy. Candidates for the degree would

pursue their studies for the year preceding their examination for the degree, and the examination would cover all of the courses prescribed. The candidates would also present a written thesis reflecting the results of original investigations. Thus the Ph.D. degree with its course requirements, comprehensive examinations and thesis established the direction of graduate study.

Early in this emergence of graduate education a few American institutions either tried or planned a unique structure—a graduate institution and faculty unencumbered by undergraduate students. The Johns Hopkins and Clark attempts to remain exclusively graduate failed because of financial stringencies. Nor were David Starr Jordan at Stanford and William Rainey Harper at Chicago able to make operative their plans for maintaining clusters of feeder undergraduate schools. Hence, what has evolved (although there are a few minor differences, institution to institution) is a graduate program welded onto an undergraduate college, with the control of both the undergraduate and the graduate programs resting with a single faculty. Graduate divisions have offered several different degrees, but during the formative years they offered chiefly the master's and the Ph.D. in most of the subjects listed under the arts and sciences. The time necessary to complete requirements gradually grew from two to six or eight years.

The processes and methods of instruction in graduate schools were generally uniform. Students with bachelor's degrees were admitted on the basis of presumed intellectual power and were scrutinized carefully during the first several years of study. On the basis of rigorous comprehensive examinations and of faculty judgements of potential, substantial numbers of students were removed from candidacy. The remainder were required to identify a subject worthy of original research, do the necessary research, prepare an acceptable thesis, and then submit to a final examination generally covering the subject of the dissertation. Since all candidates were supposed to be broadly educated people and since all were expected to use scholarly materials in other languages, a general regulation was for students to pass examinations in two foreign languages, usually French and German. In one respect the American graduate program deviated considerably from European counterparts. Considerable emphasis was placed on course work, and students were required to follow a somewhat prescribed program. The archetypal graduate course was the seminar, in which students and their professors would critically examine the results of independent research carried on in the library or laboratory.

Critics and Criticism

The intensity and the focus of criticisms of the characteristic mode of graduate education in the United States have varied, of course, according to the concerns of the critics. Perhaps the nature of the tensions, the parameters of graduate study, and the conventional wisdom until the end of the 1960s can best be explored through the comments of three typical critics and of graduate students themselves.

Berelson's Defense

Bernard Berelson[1] examined much of literature about graduate education, made some independent studies himself and, in the main, found graduate education to be good, viable, and needful only of minor modifications for proceding into the last third of the twentieth century. He argued that the purpose of doctoral training is to prepare teachers and scholars; that the research training, culminating in a thesis, has not been overemphasized and, indeed, could be emphasized still more strongly. Despite claims to the contrary, recipients of Ph.D.'s do continue research and do publish much more frequently than has generally been supposed. Although frequent demands are made to broaden the intellectual preparation of doctoral students, intense specialization is a positive good without which the Ph.D. degree would lose its distinctiveness. It is this specialization, rather than the acquisition of knowledge of pedagogical techniques, which makes an individual an effective teacher.

Experiments with interdisciplinary sorts of doctoral programs have generally proven unsuccessful because academic disciplines cannot be joined in any contrived manner and because the market expresses wisdom in preferring a specialized Ph.D. holder to one having had broader sorts of experience. While Berelson has no objections to graduate schools providing teaching experience for all Ph.D. candidates, he doesn't feel that to do so is imperative. First, an increasingly large proportion of doctoral degree holders enter nonacademic positions after graduation, and hence don't need preparation in teaching; second, employing institutions properly should provide guidance and in-service training for new degree holders in their first teaching position. Writing in 1960 with considerable prescience, Berelson on two grounds rejected special degrees for college teachers, such as a strengthened master's degree or a Doctor of Arts degree: (1) he foresaw that graduate schools

[1]The following information and evaluation substantially follow Bernard Berelson's *Graduate Education in the United States* (New York: McGraw-Hill Book Company, 1960).

would be able to produce all the needed Ph.D.'s, and (2) he felt that the sheer respect which holders, producers, and users of Ph.D.'s maintained for the degree would minimize the value of another degree inevitably to be regarded as the hallmark of second-class citizenship.

Berelson is equally sure of other aspects of graduate education. A relatively few very strong institutions produce most of the Ph.D.'s and will continue to do so, augmented by gradual entry of only a few new institutions each generation into the ranks of top quality institutions. And this elitism is good. It insures standardization of product and is a means by which quality control can be exercised with respect to new institutions seeking to create programs. The existing techniques of graduate student selection are essentially sound, emphasizing as they do qualities of intellectual power revealed in previous academic work and in measured academic aptitude. Because such intensive screening of candidates goes on during the first two years of graduate study, the much maligned high attrition rate of these students does not seem excessive. Nor did he find that graduate students spend an excessively long time receiving their degrees when the time they spend in other activities is properly weighted. The Ph.D. candidate who interrupts his graduate study in English or history to teach his subject is probably deepening his understandings. Hence, in the long run, he may be better off for having required ten years before receiving his degree.

Berelson has also felt that general antipathy to the foreign language requirement—which came about because foreign languages were not stressed in elementary and secondary schools for several generations—is likely to be of relatively short duration. Within a decade or so, as students enter college with knowledge of a language other than their own and increasingly take four years of a language in college, the burden of language examinations will be lightened. Further, there is evidence that scholars, following completion of the degree, do use their foreign languages in subsequent research.

Berelson approved of the rigorous and demanding examinations throughout doctoral study. Where the oral examination in defense of the dissertation has degenerated into a ritual, there is no objection to eliminating the formality. A better course of action would be to strengthen both the preliminary examination system at the end of course work and the oral examination. The dissertation rests at the heart of Ph.D. work and will always be retained. A number of dissertations do not make particularly original contributions to knowledge, but the goal of making such a contribution should be held high.

The growing tendencies for faculty to regard the dissertation as a training instrument and to shorten somewhat the length of theses to allow more careful reading by several different faculty members are wise.

The tendency for the master's degree to become an all-things-to-all-people sort of certificate does not bother Berelson, for no longer does—nor should—the master's degree imply any particular research competency. Rather, and quite properly, the master's degree is becoming an extension of undergraduate programs. Nor is a postdoctoral degree needed, although postdoctoral fellowships will certainly remain in graduate education. Maintaining the high quality of the Ph.D. will insure its continued acceptance as an index of scholarly capability.

When all things are considered, American graduate education is in remarkably good shape. Recipients of the degree value it and comment favorably on most elements of their programs. Graduate deans and graduate professors like the present system and see no reason to do more than make minor modifications from time to time. Both college presidents and business and industrial employers show approval of the Ph.D. by seeking yearly to increase the proportion of employees with Ph.D. degrees. In view of such endorsement there is no need for apocalyptic calls for reform or for continuing the carping criticism.

Berelson's pride in graduate training is reflected in his overall assessment:

> On the whole, over the years, the graduate school has done a great deal for society:
>
> It has grown from a few fields training a few students in a few institutions, to a large and impressive national system of advanced training.
>
> It has trained a large body of professional teachers for American higher education and trained them in subject matter.
>
> It has increasingly trained staff for the secondary and elementary school system, especially at the level of leadership.
>
> It is increasingly training personnel for administrative as well as research posts in industry and government.
>
> In addition to providing personnel for enriched undergraduate work on its own campus, it has led a number of educational experiments at the collegiate level and it produces a number of the leading texts used throughout the system of higher education.
>
> It is now taking the lead in reconstructing parts of the curriculum at the high school level and in the further training of high school teachers.
>
> In all these ways it has served as the source in which a large part of the educational system is renewed and refreshes itself.

> In both educational and non-educational spheres the graduate school's stamp is accepted as a qualifying mark of competence, often *the* qualifying mark, so that the graduate school has become the chief screen of scientific and scholarly talent in the society.
>
> Its leading personnel have increasingly served as advisors and consultants on the largest issues of our national life—foreign relations, economic affairs, scientific policy, civil rights and liberties, health and welfare.
>
> In one of its spheres it has become a key to the national security. In others it has made direct contributions to the good life through the application of learning.
>
> In a relatively brief period of years it developed an American brand of advanced training that surpassed the models abroad, and not only held American students but attracted more and more foreign ones . . .
>
> To anyone who sees life steadily and sees it whole this is quite an accomplishment for a relatively few decades.[2]

McGrath's Attacks

But others are considerably more skeptical. Earl J. McGrath[3] believes that graduate education has fastened a stranglehold on all collegiate education and is likely to cause the demise of liberal learning in the United States. Because academic departments control both undergraduate and graduate curricula and because departments tend to value most highly those sequences of courses leading to intense specialization in a discipline, other courses of more general or liberal concern are eliminated. Graduate students proceeding through a program of intense disciplinary specialization develop a fondness for that style and in subsequent faculty roles impose the curricular model of the graduate department on undergraduate institutions, even though that model may be alien to the best interests of the undergraduate institution and its students. Because graduate education has so stressed research, the significance and respect for teaching has seriously declined. This is especially tragic since the evidence indicates that relatively few Ph.D.'s do active research after receipt of their degrees. Thus the anachronism is produced of graduate schools stressing research but sending the majority of their graduates into careers of teaching for which they have provided no preparation.

Graduate schools have been particularly myopic in not recognizing that graduate education should prepare people for at least three distinctive professional roles. Some professional roles focus on

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[2]Berelson, pp. 258-259.

[3]Earl J. McGrath, *The Graduate School and the Decline of Liberal Education* (New York: Teachers College, Columbia University, 1959.)

people (teaching and counseling); others deal with application of knowledge to practical problems (engineering or administration); and still other focus on knowledge *per se* (history or literature). The greatest social demand is for people in the first two roles. (Using W. H. Cowley's "democentric" and "practicentric," the graduate school concentrates its energies on the logocentric.) If liberal education is to survive and appropriate reforms are to be made in the graduate school, certain essentials must be achieved. First, there should be separate programs for the large majority of graduate students who will enter college teaching. Those programs would stress the nature, methods and techniques of education and would provide closely supervised apprenticeships or internships in college teaching. Different sorts of dissertations would be required of these students, dissertations which encourage synthesizing or conceptualizing studies rather than seeking to establish new facts through rigorously controlled experimentation.

The restoration of liberal learning demands that the meaning of scholarship and of research be so clarified that graduate programs for those preparing to devote their lives primarily to undergraduate teaching and to factual research, respectively, can be differentiated. A beginning could be made toward this end by agreeing that, though all must be scholars, teachers need not be engaged in research in the sense of making original contributions to knowledge.[4]

As preparation both for this broader sort of dissertation and for the role of undergraduate teacher, course work and seminars would be devised to provide much broader experience and much greater interdisciplinary activity. With respect to this matter the differences between McGrath and Berelson are poignant. Berelson commented that the interdisciplinary Doctor of Social Science degree at Syracuse University, one of the largest interdisciplinary efforts, actually sent most of its graduates into secondary school work. McGrath, viewing the same program, saw it as one of the most promising attempts to make graduate education relevant for the college teacher[5] and quoted approvingly an outside assessment of the program:

> The broad factual background that serves as a base for a teacher's professional role can be best obtained if the narrow lines of traditional academic specilization are avoided. This emphasis upon breadth of understanding in the several social sciences does not preclude depth. Along with breadth of perspective the college teacher should have content depth in a particular area but such an "area of

[4] *Ibid.*, p. 38.

[5] The director of the program, Ray Price, agreed with McGrath and claimed Berelson never examined the program or its products.

depth" should be defined only partially in terms of traditional concepts. For example, although a college teacher needs considerable backgound in political science if his area of depth i that of American political systems, he must also have extensive knowledge of American history, economics, geography, sociology, and social psychology.[6]

McGrath also felt that the practitioner doctorate should be shaped differently from the research doctorate.

Berelson and McGrath differed radically on the effects of graduate education. Whereas Berelson saw enormous contributions which graduate study had made to the society, McGrath saw just the opposite.

> The decline of liberal education in this country parallels almost exactly the ascendancy of the graduate school. A review of the rise of the latter will show unmistakably that this relationship is not adventitious. On the contrary it will disclose that this newer branch of higher education has had a direct and profound, and on balance a harmful, effect on higher education and the institutions society believes it has established to provide such education. It will show that during the expansion of graduate education the liberal arts colleges began to surrender their independence. Gradually they relinquished the function which for centuries in British and later in American higher education had been their heritage and their glory, to wit, the function of instructing young people in the Western European intellectual and spiritual traditions.[7]

A Third View—Somewhat Neutral

A much different analysis is presented by Christopher Jencks and David Riesman,[8] who judge that the graduate departments in the sciences and humanities are really professional schools which estimate with considerable precision what their purposes are. They exist to produce the people who will staff other graduate departments and who will produce the research needed to elaborate a discipline. While there is clarity of purpose, there is ambiguity of process. Graduate training is almost exclusively for research; however, graduate certification in the form of a Ph.D. is still primarily certification to teach, although graduate schools make no pretense of preparing people for this latter role. However, graduate departments

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[6]McGrath, *The Graduate School and the Decline of Liberal Education*, p. 54, citing Syracuse University, "The Doctor of Social Science Program at Syracuse University," December 1958, pp. 1-2.

[7]*Ibid.*, p. 14.

[8]Christopher Jencks and David Riesman, *The Academic Revolution* (New York: Doubleday and Company, 1968).

insist on maintaining control of undergraduate programs for several reasons. Undergraduate instruction provides subsidy for members of the academic profession to practice, at least part of the time, what they were trained to do. Since graduate departments exist primarily to replicate their own members, there is little incentive for diversity. Graduate departments have not looked to their neighbors for new ideas and agenda, nor have they looked to practitioners to enrich their activities.

In a sense, Jencks and Riesman argue along lines parallel to those established by McGrath. They also see the unhealthy influence of graduate education on undergraduate instruction, yet they appear willing to accept this condition as a fact of life in a predominantly deterministic society. Their ambivalence is well revealed in their comments:

> Despite the relative clarity with which they perceive their purposes and define their programs—a clarity that is almost certainly illusionary—the academic graduate schools are the primary force for growth within the modern university. Their enrollments have been rising at a fantastic rate, in comparison to both population and undergraduate enrollment. Their status is also rising. Both in their own minds and the minds of the other professional schools, they occupy a position somewhat comparable to that of theology in the medieval university. Other professional schools justify themselves (and their budgets) in terms of external problems and needs. The graduate academic departments are for the most part autotelic. They resent even being asked whether they produce significant benefits to society beyond the edification of their own members, and mark down the questioner as an anti-intellectual. To suggest that the advancement of a particular academic discipline is not synonymous with the advancement of human conditions is regarded as myopic. Perhaps, considering the affluence of American taxpayers, and the ample supply of well educated college graduates, it really is.[9]

Student Criticism

While any demanding and potentially frustrating experience such as graduate study will incur a reasonable amount of complaining and criticism by those who undergo it, criticisms if made frequently enough deserve some consideration. In several recent studies,[10]

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[9] *Ibid.*, p. 50.

[10] Ann M. Heiss, *Challenge to Graduate Schools* (San Francisco: Jossey-Bass, Inc., 1970).

Allan Tucker, *et al.*, *Attrition of Graduate Students* (East Lansing, Mich.: The Graduate School, 1964).

Don Cameron Allen, *The Ph.D. in English and American Literature* (New York: Holt, Rinehart & Winston, 1968).

John L. Snell, *The Education of Historians in the United States* (New York: McGraw-Hill, 1963).

attempts were made to elicit graduate student response concerning their graduate education experiences.

Although the various respondents expressed much satisfaction with their graduate work, they also agreed considerably on a number of weaknesses. Taken in the aggregate these serve as additional indicators of needed change. Too frequently courses were organized and scheduled apparently with the professor's interests in mind and without reference to experience needed by students to help master a field. Thus courses tended to reflect current professorial research interests and to ignore the end product of a well-prepared Ph.D. All too frequently seminars were poorly organized, seemingly shedding no light on either the professor's work or the students' emerging research interests. They tended more to be rap sessions, with the sole evidence of prior organization the selection of a title for the seminar. Many of the courses seemed repetitive of work taken in undergraduate college and taught by a similar lecture method, even when groups were small enough that another mode would be possible. While graduate professors generally received high marks for knowledge of a subject, their teaching left much to be desired. Said several graduate students in this vein:

> "My courses illustrated how bad teaching could be."
>
> "They taught me to be a teacher by showing me how not to be a bad one."
>
> "Many courses simply repeat undergraduate courses."
>
> "They were all boring except for research papers which I worked on on my own."
>
> "The courses had value only to show me how to squeeze through the 'prelims' or to provide guidelines for my private study."

A second cluster of criticisms involved guidance. While some graduate students felt that their relationships with their professors were quite appropriate, a goodly number felt that the professor was unavailable when needed, provided poor guidance, or was himself ignorant of the pitfalls of which students should be warned. Lack of guidance seemed especially significant in the selection of dissertation projects. The preparation of a thesis is a lonely and frustrating task, and graduate students periodically need support and assistance—yet too often professors were unavailable or unconscionably long in returning drafts of a dissertation or of a proposal. Consistent with this criticism about faculty unavailability was the widely held belief that faculty members spent too much time building research and consultation empires and were thus detracted from their primary responsibility to their graduate students.

Examinations, particularly the preliminary examination, did force students to do a good bit of work on their own and to synthesize previous experiences. However, questions too frequently were capricious; no guidelines of appropriate answers had been established; and questions did not adequately sample a full doctoral program. Oral examinations were regarded by a few as entertaining, by some as a symbolic "finally arriving" at a professional level, but for large numbers the oral examination was an occasion for professorial sadism or demonstration of internecine warfare among the professors.

In a related vein, students experienced too many formal hurdles which made graduate study a survival course rather than an enriching educational experience. Because of the bureaucratic system and the idiosyncratic desires of professors, much graduate training seemed to reward conformity and ability to comply with someone else's demands more than to reward creativity and independence of spirit. Underlying many of these comments of graduate students was a feeling of loneliness and of great uncertainty about finishing. These feelings were intensified by the fact that in recent years substantial numbers of graduate students are married, often have children, and hence experience all of the worries of establishing a young household on top of the work of an anxiety-producing educational experience.

A large proportion of the graduate students in all four samples indicated that there was not adequate training for college teaching, and they expressed a desire that graduate programs should give explicit attention to preparation for the role of teacher.

Admittedly many student criticisms are relatively minor and even picayune. However, in aggregate they suggest something is fundamentally wrong with graduate education, especially in the processes of education such as course content, teaching and techniques of advising.

Changed Forces and Pressures

As of the early 1960s the matter of whether or not graduate education should change or was likely to do so was somewhat at an impasse. A cogent rationale suggested that graduate education was fundamentally sound and needed only minor changes. This point of view was generally reflected in practice during most of the euphoric 1960s. Prestige universities, crowned by their graduate and research activities, prospered and became models to be followed by virtually all other institutions of higher education, including liberal arts

colleges. They were richly supported by an impressed public and seemed likely to retain essentially the forms existent in 1960.

There were of course those who thought otherwise, but their criticisms were for the most part ineffectual against the affluent success of expansions in graduate education and research. Oliver C. Carmichael, for example, after years of distinguished service as president of both university and foundation, criticized graduate education somewhat along McGrath's lines and recommended, with some major foundation support, a refurbished master's degree. To Carmichael, the heartbreaking result was simply to add a group of reasonably well-supported graduate students into the Ph.D. pipeline. But in many respects the 1970s are radically different from the 1960s, and some of these differences may be sufficiently profound to indicate real changes in higher education generally and graduate education specifically. Some criticisms of graduate education which in prior times were made largely by college presidents and a few students of higher education are now being made by the larger constituency of college students and the supporting public; this increased force may cause graduate faculties to modify many parts of their programs.

Size

First among many new and potent social and educational forces which may dictate change in the nature of graduate education is the sheer size and rapidity with which graduate enrollments have increased. When Berelson was idealizing graduate education in 1960, although he did admit growth, he was still visualizing a relatively small student population and an appropriate mix of professors to students so that seminars, examinations, and thesis work could be tailored to individual student needs. However, the vast numbers of students currently—and potentially to be—enrolled in graduate study suggest a definite qualitative difference. Based on estimates on announced plans of institutions, an increase in annual doctoral production from 26,100 in 1968-69 to between 60,000 and 70,000 in 1980 is predicted.[11] Similarly, master's degrees could, if present plans are realized, increase from 188,600 in 1968-69 to between 250,000 and 400,000 in 1980. And much of this expansion will take place in institutions rapidly expanding in size from under 10,000 students to between 20,000 and 30,000 students. If expectations are

[11]Lewis B. Mayhew, *Graduate and Professional Education, 1980.* (New York: McGraw-Hill, 1970) p. 1.

realized, graduate study will take place in institutions of 20,000 students or more, almost half of whom will be upper division, graduate, and professional students.

Implications of graduate programs of such magnitude are several-fold. First, it seems likely that master's programs will regress even more sharply to being a fifth-year extension of undergraduate preparation, with no pretensions of a research orientation. Second, especially in view of increasingly serious financial problems, it is likely that some modification of the mentor-apprentice relationship between the professor and graduate student will be required. Already in some institutions the graduate student seminar, in the sense of a small group of six to eight students and a professor, has evolved into a large discussion class. Third, especially in the light of some rather strong student criticisms of graduate work, increased size will demand different techniques for advising and guiding student progress. With respect to program, size might dictate either more formal patterning of programs into which groups of students can be enrolled or much greater reliance on independent study, with infrequent student-faculty contacts.

Cost-Price Squeeze

A second force which may have even more effect in bringing about changes in graduate education is the growing financial crisis in higher education. Earl F. Cheit, after examining a carefully selected sample of institutions, has made a general assessment of the crisis:

> The essence of the problem is that costs and income are both rising, but costs are rising at a steady or slowly growing rate, depending on the period and the measure used, whereas income is growing at a declining rate. The rate of growth of expenditures may decline in any given year—as it has at some schools for 1970-71—but the longer range trend has been toward a growing rate of costs. For most colleges and universities the main consequences of the resulting divergence of cost and income began to appear in the academic year 1967-68 or 1968-69. This financial problem arose immediately after a decade of unprecedented growth in higher education. But contrary to what might be expected, that growth has not protected the schools but may well have made them more vulnerable to a downturn. Many were undercapitalized, over-extended, moving into enlarged areas of responsibility without permanent financing, or still raising quality standards. Because the increasing demands on the schools (both from without and from within, for research, for services, for access and for socially current programs) are an important part of the reason for cost increases, the cost-income problem is far more than the

consequence of inflation, over-extension and an external economic downturn.[12]

How this financial situation will affect graduate education cannot be known. Some believe that the financial condition will ease by the mid-1970s, in which event changes may be relatively minor; but even minor changes may make graduate education substantially different. First, there is likely to be overall decline in the funds available for fellowship and scholarship aid to graduate students; hence the graduate school may more closely resemble medical and law schools in that students and their families would be expected to pay a large proportion of the total cost. That fact alone might bring about a stabilization of time and expectations concerning graduate study, so that most students could know when they enrolled that at the end of a given period of time they would emerge with a degree—as now is true in medicine. Particularly in public institutions the expanding cost of higher education, especially graduate education, may lead legislators to demand higher faculty productivity in the form of more contact hours per week and larger classes. Already legislation to this effect has been passed in Michigan, and in California an economy-minded governor has denied budget increases for the state university, calling instead for increased faculty productivity. Quite obviously, the realization of such demands would directly affect individual research of faculty members and would probably result in larger classes for graduate students. Further, it is entirely possible that the whole nature of a dissertation could be changed because financial stringencies simply would not allow the intensive one-to-one sort of thesis work which in theory at least has prevailed in the past.

If financial limitations persist, even more profound changes in graduate education could transpire. Comprehensive universities, reluctant to concentrate on a relatively few graduate and professional programs, have preferred to seek comprehensiveness; but financial expediency might coerce institutions into cooperation and division of labor. Further, institutions may be forced to eliminate some of their larger contract research installations; this, in turn, would affect how graduate students are prepared. Particularly in the sciences, the growth of postdoctoral study and of terms of doctoral students working on related thesis topics has been a correlate of large-scale contract research: end the contract, and a different style of graduate training is mandated.

[12]Earl F. Cheit, *The New Depression in Higher Education*. (New York: *McGraw-Hill*, 1971) pp. 15-16.

Supply-Demand for Graduates

Another matter suggesting that graduate education is entering a new era is the probable excess of supply of Ph.D.'s over any conceivable demand. The potentiality of this phenomenon has been implied by Allan M. Cartter, who was one of the first in the mid-1960s to predict that an oversupply of Ph.D.'s might be imminent. Cartter has argued:

> In the last decade many innovations have been discussed but there has been little consensus and less implementation, for we were all living in a prosperous world of seemingly constant development and expansion. The 1970s, however, portend budgetary constraints since both the traditional and the new external sources of support will decline. They will see, in addition, an oversupply of Ph.D.'s since the demand for new faculty depends on three basic factors—replacement, expansion and improvement, of which the first remains relatively constant and the third is tied to the other two. The second is the key, however. Growth in the college age group is declining and, although the ratio of college enrollment to the college-age population continues to rise, it will soon reach its effective peak....Thus the need for new college teachers will decline.

Cartter continued:

> In the long life of business corporations or industries occasional recessions are painful but socially beneficial correctives. This could be the case with graduate education. We have been perhaps too comfortable and complacent for fifteen years or more, and it may take enforced reassessment of our educational goals and procedures to revitalize higher education. I think it is quite evident that more educational innovations emerged in the 1930s than in the preceding decade. Necessity is often the mother of invention. I suspect we are entering a decade where we shall have to test that old adage.[13]

One can only speculate at the beginning of a period of retrenchment on what changes may transpire, but several implications seem reasonable to suggest. An oversupply of rather narrowly trained Ph.D. recipients may suggest that a broader based education would allow for greater career flexibility. At the same time, demands by recently trained Ph.D.'s for career orientation may force graduate schools into some variant of continuing education. If, as seems likely, a number of Ph.D. holders who originally aspired to university work are diverted into junior college teaching, junior college leaders may succeed in convincing graduate schools to alter

[13]Allan M. Cartter, "Graduate Education in a Decade of Radical Change," *Proceedings of Conference on Changing Patterns in Graduate Education* (Berkeley: Center of Research and Development in Higher Education, 1970).

training patterns. Graduate schools and graduate professors do feel responsibility for placing their graduates, and should graduate training become incongruent with the requirements of a large consumer, the discipline of the marketplace might bring about change. Already some of this is happening in institutions which during the 1960s either abolished the master's degree or used it primarily as a consolation prize. Faculties have resuscitated the degree for some of their students in response to junior college desires for teaching-orientated faculty members.

Expectations of Society

Fundamentally, institutions of higher education are social institutions which must be responsive to the expressed needs of society or else lose viability. The example of liberal arts colleges losing enrollment and support during the middle decades of the nineteenth century is instructive. Liberal arts colleges insisted on perpetuating a prescribed curriculum based on the Greco-Roman classical tradition when the needs of American society were for institutions which could assimilate and transmit the fruits of an industrial and scientific revolution. Engineers, bridge builders, and scientific agriculturalists were needed and the colleges produced literary dilettantes. The overall social response, of course, was to create two new sorts of institutions (which eventually merged): (1) the land-grant college which could serve agriculture and industry, and (2) the transplanted German university which could bring science to the service of society.

From 1964 onward, increasingly intense waves of public dissatisfaction with higher education crested with demands for change. Research, especially in some of the seemingly nonproductive but esoteric fields of the social and behavioral sciences became suspect. The steady lowering of teaching loads, especially on the part of graduate faculties, attracted first the attention and then the ire of legislators. Undergraduate students began to complain about university lack of attention to their needs, and the public became incensed when student dissatisfactions manifested themselves in dissent, protest, riot and threats to grind the university to a halt.

Muckraking literature of the sort reflected in James Ridgeway's *The Closed Corporation* began to attract attention, and the ameliorative sort of literature represented by Charles Reich's *The Greening of America* became national best sellers. Generalized public dissatisfaction has already been effective in producing vindictive legislation designed to contain campus protest, some decline in voluntary

support for higher education, an even greater decline in state appropriations, and well-articulated demands for elimination of professorial prerogatives such as tenure and unlimited academic freedom. As the graduate school first became the most visable symbol of prestige and high public regard, so it is now vulnerable as the most visable symbol of academic abuse. Graduate education is thus put in the position of needing to reform itself or to face the serious consequences of loss of students, revenue, and influence.

In spite of conspicuous dysfunctions and faulty articulation between levels of education, higher education is a complex set of interacting processes and elements. This being true, significant changes at one point bring about changes elsewhere. Sometimes, of course, the changes are neither productive nor lethal, as implied by David Riesman's metaphor likening higher education unto a snake with the middle and tail following the head, and from time to time the head, the middle and the tail meeting exactly at the same point in space but for different and inappropriate reasons. Because of student pressures and a generalized air of educational discontent and threatened revolt, undergraduate education has begun to change. While some of these modifications may not directly affect the nature of graduate study, a few have enormous potential for creating change.

A hurried review of changes in undergraduate curriculum may be a portent for graduate work. Between 1960 and 1970 there was a general decline of the general education movement which had become the means by which colleges and universities provided the common learnings needed by college students. Also during that period institutions became disenchanted with the orthodox academic calendar divided into semesters or quarters, and by the last years of the 1960s the nation saw a plethora of new academic calendars. While the new media and educational technology have not as yet become central in higher education, there is enough interest and experimentation, including such things as the possibility of a university without walls utilizing educational television, to suggest that the 1970s may witness a true technological revolution in education. Another reform having considerable significance for graduate education is the variety of attempts to group faculty and students in new ways. The assumed homogeneity and compatibility of departmental groupings finally proved inadequate for undergraduate purposes, and new styles such as cluster colleges attracted attention. Also potentially powerful to changed graduate study, based as it is on sequentially organized disciplinary courses, is the move to create ad hoc issue-oriented courses and courses of varying time

lengths. Should, for example, institutions simultaneously adopt a completely free elective system and fill the curriculum with nondisciplinary courses, corresponding changes in the structure of graduate education would become inexorable. For the undergraduate college a preoccupation with things academic, divorced from the real world, has produced a revulsion and a sustained search for ways of providing off-campus experiences for which academic credit would be given. The prime example is cooperative work-study, which Asa Knowles of Northeastern University considers an idea whose day finally has come.

Each of these undergraduate reforms can, should, and probably will result in modification of graduate work, or else suggest similar changes which can be made in graduate programs. If general education no longer provides a common universe of discourse, the graduate school may be forced into providing one. If the university without walls becomes a reality, graduate residence requirements could become vulnerable. If departments no longer provide the small-group experience people require for wholesome development, departmental influence could become weakened. And if off-campus experience proves a healthy way to alleviate preoccupation with on-campus academic life, a similar need may become apparent at the graduate level.

Educational Outcomes

A last and potentially powerful force which may bring about changes in graduate education is the mounting evidence that colleges and universities are not really as effective in producing educational changes as they claim to be. Bernard Berelson in general justified perpetuation of graduate education in its present form on the grounds that former graduate students, graduate professors, and colleges and universities were well satisfied. His point becomes invalid, however, if it can be established that what satisfies former graduate students, graduate professors, and presidents is of little real utility to the consumers of collegiate education. Graduate schools have staffed American institutions of higher education. They must be held accountable for the dreary picture which emerges.

Recommendations from Current Literature

An added dimension to this panoramic view of graduate education can be obtained by pondering recommendations of those who have studied graduate education intensively and have reflected on possibilities for reforms. It should be pointed out that most of the recommendations found in contemporary literature either reiterate

criticisms from the past (e.g., concerning length of time, quality of thesis, and foreign language requirements), or are heuristic, offering no real help to those concerned with program development. For example, Heiss makes a series of recommendations many of which are of this sort. "It is imperative in this 'age of discontinuity' that universities reexamine their goals or set their priorities." Or, "Curriculum revision, reform or innovation should be systematic, involve the careful deliberation of the best minds and be pursued under conditions which remove the constraints imposed by time schedules, fatigue, or other interfering commitments."[14]

Somewhat more specific but again of no great help are the suggestions made by Snell:

1. Provide better orientation and guidance of graduate students, especially in work on the dissertation.
2. Set deadlines for various stages of progress.
3. Put less emphasis on formal courses, especially lecture courses.
4. Restrict the dissertation somewhat in scope of topic, amount of research expected, or length.
5. Raise general standards for admissions; require fulfillment of the language requirement for admissions.
6. Encourage Ph.D. candidates to bypass the master's degree; waive the requirement of a master's thesis.
7. Eliminate the final oral examination for the Ph.D.
8. Relax or eliminate the foreign language requirement.
9. Reduce the number or size of the fields that are covered on the examination for the Ph.D.[15]

However, a few definite recommendations can be culled from the critical literaure which at once imply things wrong with graduate education and point to specific reforms. First and most frequently mentioned is a generalized concern for the preparation of college teachers and the steps that might be taken to insure a better product. So significant is this matter that Chapter IV is devoted exclusively to reforming the preparation of college teachers.

The entire concept of a comprehensive university has been called into question as a viable model. Comprehensiveness implies developing strength in many different fields; but given increasing costs, comprehensiveness places far too great strain on institutional resources. Thus a refrain which pervades conference reports, individual critiques and the like is that there should be much greater division of labor within the graduate field. If the University of

[14]Heiss, *Challenges to Graduate Schools.*

[15]Snell, p. 181.

California at Berkeley possesses great strength in a field, that probably is reason enough why Stanford should not. Similarly, if a state already maintains a comprehensive university with reasonable strength in a number of fields, this is probably evidence that the state should not attempt to replicate it in another institution. Self-denial may be impossible, given the orientation toward prestige which characterizes American graduate education, yet long-term viability seems to make the effort imperative.

The problems of various minority groups have really not been met in any save a relatively superficial and numerical way. After the death of Martin Luther King, Jr., universities did launch major efforts to increase Negro enrollment and subsequently other minority group enrollment. Fellowship funds were provided and the proportion of minority group students on campuses did increase significantly. However, criteria for admissions have not been well specified except for such vague phrases as "admitting outside the competition but with some assurance of academic survival." Attempts at remedial work for minority group students whose backgrounds were seriously deficient appear to have been neither systematic nor particularly imaginative. Further, no evidence has been accumulated as to the efficacy of the commonly attempted device of a year of postbaccalaureate but pregraduate work. Criticisms continue to mount that the socializing or acculturative elements of graduate education have not really been worked out to apply to minority group graduate students. This seems especially serious in view of a generally recognized aphorism regarding the educational power of peer groups both for graduate and for undergraduate education. Then a particularly troublesome problem which has yet to be resolved is the matter of academic standards. The prevailing posture is little more than a cliche when it argues that minority group students coming from educationally disadvantaged backgrounds may be admitted as marginal students, but at the point of graduation they should be held to exactly the same standards as more privileged students. The problem, of course, is how to bring culturally disadvantaged graduate students up to the same level of performance demonstrated by highly privileged graduate students within a reasonable time (five to six years for doctoral students, for example). At present there is simply no evidence available that it can be done, yet there is a fundamental social imperative that it will. Lastly, with respect to minority members, especially those searching for a new identity, is the matter of what role ethnic studies should play in a graduate program. Student demands are strong for such studies, which properly could be either heavy cognate or elective fields, or even major fields for a

substantial number of students but the rationale for such balance needs serious attention.

Somewhat related is the criticism that graduate work in the arts and sciences has been, for the most part, disciplinary-oriented, whereas the emerging needs of society and interests of students are problems-oriented. This issue seems especially revealed in the relationship between professional fields such as engineering and education and the most prestigeous graduate fields in arts and sciences. If the Ph.D., oriented as it currently is toward disciplinary rigor, is held as a model toward which the doctoral degrees in professional fields should move, the needs of further practitioners will very likely be ignored or overlooked. This point is elaborated eloquently by two distinguished commentators. Howard R. Bowen, after praising graduate education, argued:

> Many of the recent criticisms of the academy are, in my opinion, justified. The academy is narrowly specialized and discipline-oriented. It is scientistic, it is rather exclusively concerned with the quantitative and the empirical and neglects values, ideologies and emotions, and is too closely tied to the narrow values and aims of the military industrial establishment. . . . I do not mean that the scientific method and scholarly detachment as we have known them are to disappear or that specialization is to give way to some miraculous reintegration of knowledge. The scientific outlook still has a firm place in the academy but the university will be giving more attention to values and meanings. It will be increasingly concerned with areas not amenable to scientific exploration and qualification.[16]

In a similar vein, Samuel B. Gould contended:

> There will always be a need for speculative inquiry without regard for current problems, of course; but the degree of pride in and emphasis upon remote pure research that has been evident in graduate schools can no longer be socially justified. . . . We shall not only have to strip away much of the snobbery about pure research untainted by mundane practical applications, but we shall also have to seek new academic linkages and integrations at the graduate level. . . . As society's tasks have become more specialized and society itself has become more fragmented and compartmentalized, there has arisen a new need for generalists, for systems analysis, network planning, policy science, for educated persons who can see the farflung and cascading consequences of seemingly isolated acts like spraying fruit trees against insects, building roads through a city, or helping one beleaguered nation abroad. Graduate education can no longer train only effective specialists but must confront the rapidly swelling need for socially active, broad-thinking generalists. Without

[16]Howard R. Bowen, "Stresses and Strains," *The Graduate Journal*, 8, No. 2 (1968): 343.

> excellent coordinators, administrators and comprehensive thinkers, our pluralistic society, so dazzling and efficient in many of its parts, faces the danger of serious social disintegration.[17]

Contemporary critics also reflect the same quandary as those of the past. They recognize the power and contributions of academic departments, yet recognize that the departmental structure may be an anachronism; but no new structures are suggested to take the place of departments. Dressel[18] described how centers and institutes have been created as an alternative to academic departments. Yet, whenever these persist over time they assume all of the characteristics of a department and become one more of these powerfully defended enclaves. Heiss was even more dogmatic when she claimed:

> The departmental structure appears to have become dysfunctional for scholarly progress. Socially and politically it tends to inhibit the flow of communication and encourages the formation of enclaves or separate interest groups. Large and powerful departments often dominate the outcome of decisions, and overshadow smaller and less visible units. In terms of the Ph.D. requirements, some departments limit the horizon of the student by requiring him to take all of his work within its confines. In too many cases it operates as a collective bargaining agency rather than as an administrative vehicle for negotiating the road to Scholarship.[19]

But she doesn't offer an alternative which would seem to have a reasonable chance of being accepted.

The present condition of graduate education can be quickly summarized. Graduate education has been—and continues to be—the most rapidly growing segment of American higher education. A number of prestige institutions have created graduate programs of which they are justly proud, and they continue to try to improve them, for the most part along traditional lines with minor changes. These institutions have becomes the models for developing institutions which seek to retrace the evolutionary course of the most distinguished universities. But while those within graduate education seem relatively complacent, there are a number of forces and factors which seemingly demand major reforms. The questions remain as to what those reforms should be and what likelihood there is that they will be adopted.

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[17]Samuel B. Gould, "A New Social Role," *The Graduate Journal*, 2, No. 2 (1968): 355.

[18]Paul L. Dressel, *et al.*, *The Confidence Crisis* (San Francisco: Jossey-Bass, 1970).

[19]Heiss, *Challenges to Graduate Schools*, p. 280.

Chapter II

CURRICULUM AND INSTRUCTION

Although some islands of innovation can be found, graduate work generally has not been innovative. A typical comment is that the real desire is to do better what is being done rather than to make any marked change. Or, changes do take place from time to time in departments, but no graduate schoolwide program of reform would be possible or desirable. Hence this analysis cannot possibly present descriptions of what is generally happening. Rather will it outline the range of changes taking place at different institutions and suggestions for change urged by different learned societies and professional organizations—all in an effort to discover whether an overall pattern of changing practice can be suggested.

Prior Considerations

Two factors which either directly or indirectly affect changes in curriculum and instruction are admissions standards and the time required to develop competency in a given field. Of these two, the questioning of admissions standards is the more recent, largely because of minority group charges of discrimination. How these issues are resolved, however, may imply much about the direction graduate curriculum and instruction may take.

Admissions Standards

As noted earlier, Berelson has argued in defense of the status quo that admissions requirements are tightening and that the quality of students accepted by graduate schools is increasing steadily. He saw no significant differences between the quality of the students accepted into medical and law schools and those accepted into the better graduate schools of arts and sciences. Because the nature of graduate work is intellectual, he saw no reason to search for admissions criteria other than those indicating sheer intellectual potential. He expressed, in a definite logic, only one caveat to this stance:

> Across the system as a whole, just about everyone who applies to a graduate school gets into one. The only way to get more good people trained at the doctoral level for industrial employment or university research or college teaching, or professional practice, or any other specific outcome, is to get more good people trained. The only way to get more good people trained is to get more good applicants. The only way to get more good applicants is to get more applicants.[1]

He then recommended a specific reform: recruitment for doctoral study should be conducted more systematically and more energetically.

As the admission process which Berelson upheld has worked, final decision rests with an academic department or, even more restrictively, with an individual professor who has the option of accepting or rejecting any applicant. Undergraduate gradepoint average, the college from which a student graduated, the undergraduate major and measured academic aptitude are the typical criteria. The better-known graduate institutions, assuming that considerable screening will be done by formal course work and the preliminary examinations, tend to accept more students (perhaps by as much as a third) than they expect to graduate. Graduate faculties in well-known institutions have been naively sanguine about the attrition thus engendered: there is no evidence that further screening of students already ranked high in intellectual ability will result in an even higher level of ability on the part of degree recipients. Indeed, MacKinnon contends there is "an increasing body of research data which suggests that highly creative youths as well as youths with creative potential are not always those whose academic records insure their admission to college."[2] Highly creative persons in a variety of fields were in general not distinguished for grades they received or for their level of measured academic aptitude or intelligence above a minimal level of ability to manipulate abstractions. For example, "The college gradepoint average of a group of research scientists correlated low and negatively (-.19) with their later-rated creativity as scientists." And, "taking scores on the Terman Concept Mastery Test (Terman, 1956) as measures of intelligence the researchers found that the correlation of intelligence with creativity in a sample of architects was between minus .08 and minus .07 in a sample of research scientists."[3]

There are generally three major approaches to changes in admissions policies. The first, which has not as yet attracted much

[1]Berelson, p. 227.

[2]Donald W. MacKinnon, "Selecting Students With Creative Potential," in Paul Heist, editor, *The Creative College Student: An Unmet Challenge* (San Francisco: Jossey-Bass, 1968).

[3]*Ibid.*, pp. 104, 108.

following from graduate schools with respect to Caucasian students, is to minimize the role of gradepoint averages and other measured evidences of intelligence. MacKinnon and others concerned with creativity have argued for this sort of reform. He believes that markedly lowering the level of intelligence required for admissions would not result in fewer students of outstanding creative ability. "We must supplement intelligence and aptitude tests with independent measures of extracurricular achievement and originality, and if additional checks are to be used, with tests that tap those traits and motivational dispositions which have been shown to be positively related to creative striving and creative achievement."[4] Holland and Richard, basing their conclusions on a sample from a population of 612,000, similarly contend that:

> Measures of academic potential are among the chief methods used to determine admission of students to college. Our present findings, however, suggest that the emphasis in colleges and universities on academic potential, a relatively independent dimension of talent, has led to neglect of other equally important talents. If academic talent has a substantial relation with vocational and other non-classroom achievement, then this intense pervasive concern with academic potential would be less disturbing. Unfortunately, college grades are generally poor predictors of real life success and are at best only inefficient predictors. Since a college education should largely be a preparation for life, both in the community and in a vocation, we need to examine grading practices."[5]

In contrast to the first approach, disciplinary studies of graduate education admissions almost invariably recommend increased selectivity. For example, the panel for sociology of the Behavioral and Social Sciences Survey saw that:

> The market for trained sociologists will probably be very tight in the next decade. We are apprehensive that the resultant pressure to produce Ph.D.'s in great numbers may lead simply to headlong expansion and this expansion may pose a threat to the quality in graduate admissions. . . . Because the rate of expansion of graduate training will be higher in those institutions now regarded as relatively less distinguished, the importance of maintaining higher standards is all the more important. . . . [Therefore,] it is recommended that universities and departments strive to maintain high standards for graduate admissions where they are high, and raise standards where they are low.[6]

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[4] *Ibid.*, p. 108.

[5] John Holland and James M. Richard, Jr., *Academic and Non-Academic Accomplishment* (Iowa City: American College Testing Program, 1966), p. 16.

[6] Neil J. Smelser, *et al.*, *Sociology* (Englewood Cliffs, N.J.: Prentice-Hall, 1969), p. 160.

The third and the only substantially innovative approach is that of a substantial number of graduate schools which are attempting to recruit minority group members who do not meet the formal admissions criteria generally imposed. This quest has placed graduate education in an ambivalent position and has raised the question of whether graduate schools should jeopardize selectivity. On the one hand is a general awareness that the proportion of minority group members in graduate schools should be increased beyond the deplorable levels prevailing through 1968. On the other is an awareness that minority group members from the Negro, Mexican-American, and Indian populations normally do not reflect strong gradepoint averages (especially if they have attended highly selective undergraduate institutions) or high measured academic attitude. This has recently led institutions into a variety of experiments with admissions criteria, but no substantial body of evidence has yet been accumulated to indicate their success or failure. The admissions process at the University of California, Los Angeles, seems indicative of how departments are coming to look at a wider variety of evidence.

> Instead of using the high gradepoint average and test results as the main criteria for admission, departments were more amenable to giving consideration to potential motivation and personal history. Many students who had attained acceptable undergraduate records while being employed thirty to forty hours per week were considered for admission as were other students who had achieved well in their major but had spotty records in other areas. Recommendations from professors were heavily weighed, as were written statements by students. In many instances, personal interviews were conducted by departments. Departments were greatly reassured by the knowledge that academic assistance and financial assistance were available, and that there was strong support given the students participating in the program.[7]

Cornell University has a policy that "if a student is known to be black, and he has a marginal record in terms of standard admissions criteria, he will be given the benefit of the doubt." In other words, Cornell implies some sort of quota of students who will be accepted outside normal competition. The University of Illinois welcomes applications for admission to graduate study from black students and refers the credentials of each applicant to faculty members in proposed major departments. There judgments are made on the basis of specific minimum entrance requirements and "on potential for

[7] *Graduate Education and Ethnic Minorities* (Boulder: Western Interstate Commission for Higher Education, 1970), p. 50.

success in the program." Since the University of Illinois is making a massive effort to increase the number of Negro students, evidence of potential other than academic indexes is being used. The University of Iowa, also interested in increasing its enrollment of black students, states that a student who has a gradepoint average below the minimum required "but who can supply other evidence of high potential for graduate study" can be processed through a special graduate admissions apparatus. Michigan State University maintains a center for urban affairs which is the operating unit for supporting disadvantaged students. The university's policy, however, clearly reveals its ambivalent position:

> To minimize the risk of encouraging mediocrity admission is still based upon the individual's past performance and future promise. There remains, however, a definite opportunity for persons who would not ordinarily qualify for financial assistance. To be eligible for support, the applicant must qualify for admission to the Graduate School, possibly on a non-degree or provisional basis initially.

The University of Michigan maintains an opportunity program designed to provide support for black students and instructs candidates to indicate on the application form that they are also applying for the opportunity program.[8]

Related to this concern for minorities is an emerging strong feeling that women have been discriminated against in admissions policies, particularly in large and prestigeous graduate schools. Although women's academic records tend to be higher than men's, women are proportionately underrepresented in graduate enrollments, especially in mathematics and the sciences. Suggested changes in policy take several forms: the first is implicitly to provide for a quota of women students; the second is to allow women to enter graduate study on a part-time basis or to interrupt graduate study for marriage or childbearing with the privilege of reentry without loss of credit through passage of time. As is true of changes in admissions policies for Negroes and other disadvantaged minority students, changes are so recent that evidence of their effectiveness is simply not available. What seems to be true, however, is that minority group efforts to enter the mainstream of American society and women's demands for more equal treatment are forcing graduate schools to modify admissions standards.

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[8]Julie Paynter, *Graduate Opportunities for Black Students, 1969-1970* (unpublished study, 1969).

Duration Of Graduate Study

An area of reform which has been debated about as long as graduate education has existed in the United States is the appropriate length of time a program should consume. Part of the debate rested on inadequate data so that anecdotal evidence had to be used to prove how much time doctoral work actually consumed; but much of the debate derives from differing conceptions of the nature of doctoral work. Berelson, always sanguine about the present state of graduate education, reached the conclusion that when one excludes nonacademic time, the actual time spent in doctoral study compared favorably with the time spent by students in law or medical schools. Further, he was willing to defend the longer lapsed time for students to obtain degrees on the ground that much of their nonacademic activities contributed to their maturation as scholars and teachers. In spite of his contention, criticism as to length of time continues unabated. The Carnegie Commission on Higher Education in its policy statement, *Less Time—More Options* (January 1971), urged that the Doctor of Philosophy degree should customarily be awarded after a four-year course of study following the bachelor's degree. The Assembly on University Goals and Governance argued:

> Many disciplines would be well advised to consider what has become commonplace in the natural sciences, where students frequently receive their advanced degrees in a relatively short time, having demonstrated their capacity for independent research. In too many fields the use of stilted nineteenth century scholarly formulae results in the production of huge pretentious documents that mock the presumed intention of dissertation requirements.[9]

The Newman Report[10] implied the same point of view by noting the shifting of students, especially in the humanities and social sciences, from one field to another with an attendant stretch-out of program or high attrition rate. Allen'[11] also urged that the Ph.D. in English be regarded as a four-year degree, conducted in a consecutive way in order to preserve a candidate's enthusiasm for study and for subsequent professional practice.

While the general goal currently seems to be a four-year doctorate, or even less, there are serious barriers to attaining such a goal. One barrier of course, is the attitude of a number of professors who believe that it is almost unseemly to hurry what is conceived to

[9] *The Assembly on University Goals and Governance, A First Report* (Boston: American Academy of Arts and Sciences, 1971), p. 20.

[10] Frank Newman, *et al.*, *Report on Higher Education* (Washington: U.S. Government Printing Office, 1971).

[11] Allen, p. 105.

be preparation for a life of scholarship and contemplation. Such professors would agree that "the question is not how quickly but how slowly we could get the candidates through." The way doctoral study is conducted, with extreme prerogatives given graduate professors, is related to this problem. No one will ever know how many candidates have been retarded unmercifully because major professors insisted upon "just this one more item of preparation" before certifying a candidate for his oral examination. Clearly, another barrier relates to financial conditions: graduate students in those fields not receiving substantive fellowship support must drop out to teach or do other work periodically to obtain enough money to continue their educations. Wilson[12] has listed factors of varying intensity which serve to lengthen graduate work (not necessarily in their order of importance): discontinuity of attendance (marriage, military service and the like), work as a teaching or research assistant, the nature of the dissertation (off-campus dissertation, for example) financial problems, inadequate foreign language preparation, lack of coordination between beginning and advanced stages of work, family obligations, inadequate undergraduate preparation in the field, transferring from one field to another, changing dissertation topics, changes in the composition of a dissertation committee and personal or family health problems.

If the goal of a four-year Ph.D. degree is a worthy one, the question is, How may this be accomplished? Wilson made several cogent suggestions:

> 1. develop at disciplinary and departmental levels distinct patterns of expectations regarding the understandings, knowledge, skills and competencies which recipients of a Ph.D. degree should be expected to exhibit
> 2. specify the amounts, types, combinations of curricular and other forms of experience (e.g., as in teaching, research, clinical practice) which are thought to be central to the development and/or cultivation of the desired attributes
> 3. incorporate these elements into a programmatic model which reflects the judgment of the appropriate graduate faculties regarding the educationally and professionally optimal sequencing and organization of the relevant experiences and which projects normal patterns of progression through (and time schedules for completing) the sequence as programmed and, finally
> 4. develop and implement a basic strategy for translating programmatically projected expectations into actual patterns of student progress—i.e., for facilitating the movement of students into and

[12] Kenneth M. Wilson, *Of Time and the Doctorate* (Atlanta: Southern Regional Education Board, 1965).

through the preparation system "on schedule," with due regard for individual differences. Such a strategy must include as a necessary but not sufficient element a plan for continued financial support *throughout the projected duration* of the program contingent upon a candidate's meeting clearly defined criteria of satisfactory progress.[13]

Almost as though designed to exemplify Wilson's principles was a project at Fordham University to provide paid supervised teaching experience and some instruction in pedagogy for doctoral candidates at that institution. The concern was prompted partly by problems endemic to higher education, partly by factors indigenous to Fordham and the greater New York area. The institution recognized that students take too long to complete the doctoral degree partly because of the need to earn a living. It also recognized that many who complete the Ph.D. degree do not have any teaching experience before they become full-time faculty members. If somehow a paid teaching experience under supervision could be arranged, it might solve both of these problems. This solution might also serve to regularize a phenomenon in graduate institutions in the New York metropolitan area. Typically, as students moved toward the end of their doctoral work and sought jobs, they did so in the metropolitan area but thereby lost contact with their graduate institution. Further, the location, the work, and the concerns of the employing institution frequently jeopardized graduate school goals.

A regularized internship program, applications for which would flow through a graduate institution which would supervise the matching of the student to host institution, could help bring some order out of the seeming chaos. Fordham University selected a limited number of doctoral students each year and placed them in appropriate liberal arts colleges where the candidates could teach part time and spend part time either preparing for their comprehensive examinations or working on their dissertations. For this they would be paid a stipend. In connection with the program, each candidate would participate in a seminar on college teaching offered for all interns and would be subject to supervision both by a professor from Fordham and by the mentor teacher at the host institution. According to plan, students spent the first two years of doctoral study in course work. The paid internship occurred during the third year, at the end of which the dissertation proposal should have been completed. This then was followed by a fourth year during which the thesis was expected to be completed.

A generalized recommendation made to accomodate the ideal of a four-year doctorate is to contrive somehow for substantial financial

[13] *Ibid.*, p. 177.

support for students during all four years. This underlies the Ford Foundation program for improving graduate training in the humanities, the full results from which are still unavailable. A second generalized recommendation is that there should be better articulation between the graduate school and undergraduate education in order to alleviate some of the currently apparent dysfunctions. The Carnegie Commission on Higher Education struggled toward a conception of articulation when it sought to relate the range of academic degrees in a temporal manner. Thus they saw each degree from the Associate of Arts through the Ph.D. or professional doctoral degree as being built one upon the other. As a related example the University of Michigan is contemplating an integrated undergraduate and graduate study in arts and science fields on experimental bases within the next several years. Once in operation, the program will probably polarize around the already vigorous honors program in arts and science departments.

Interdisciplinary Work

While various approaches are being taken to resolve problems of admissions procedures and length of time required to fulfill the requirements for advanced degrees, one common approach to changes in graduate curriculum and instruction is significantly apparent: virtually all American universities are talking of making greater use of interdisciplinary programs. While such fields as psychology, sociology and economics have developed increasingly close relationships with other disciplines, relatively few institutions have worked out the mechanics of how to do this, nor is there any overall rationale for interdisciplinary studies or criteria on what they should include. Generally it is believed that interdisciplinary programs come at some of the interstices of established fields (e.g., genetics) or as the result of some particularly challenging social problem (e.g., bioengineering). However, interdisciplinary courses and programs are also seen as possible ways of broadening graduate education or of meeting student demands that their course work be more relevant to contemporary conditions.

Interdisciplinary attempts arise in several ways. The expansion of a discipline in a new direction with respect to research, or the drawing together of research interests in several different disciplines are among the most productive ways. Thus research on decision-making in economics and political science, with major contributions from mathematics, produces a new variant of an older field of political economy. As research concepts are elaborated and knowledge increased, a new field of teaching appears with courses offered first for graduate students and then for undergraduate students.

Sometimes this process is facilitated by a sudden awareness of a critical problem which serves to force research and theoretical interests in several fields to move closer together. Urban planning is a case in point: it brings people from civil engineering, economics, political science, sociology together with people from architecture and design. As such people pool their insights, possibilities for new courses emerge. When this happens, a team-teaching technique is usually employed for at least a limited period of time. For example, at Stanford representatives of civil engineering, economics, and architecture teach a large course, open to both graduate and undergraduate students, on urban planning. At that same institution, senior faculty from the Stanford Linear Accelerator facility, the school of law, and the departments of history, political science, and economics were encouraged to create a series of courses in international relations to be taught by teams of senior faculty members. A simpler and less expensive device is to encourage students to register for courses in different fields on the assumption that the student himself will be able to provide a synthesis. A third mode is the creation of a center or institute when there does not appear to be any existing mechanism to undertake specific interdisciplinary studies. Dressel and associates discovered a proliferation of centers and institutes generally seeking to achieve any or all of several purposes, such as:

> development of interdisciplinary studies and research not readily accommodated in the departments (Latin-American Studies); development of new fields of study or research (Electronic Acceleration Laboratory); a combination of research training and service (Institute of Higher Education); and training for graduate students, faculty field experience, research and methodological training (Social Science Training and Research Laboratory.)[14]

A fourth but much less experienced device is for a group of faculty from different disciplines to join together to plan a new course, to create syllabi and readings with the expectation that a faculty member from any of the contributing subjects would feel comfortable in teaching the course. In view of the till-now individualistic style of graduate education and in view of the tendencies for graduate faculty members to want to teach their "own thing," not many examples in arts and sciences can be found, although a few in the graduate professional fields are in existence.

Several examples illustrate these approaches. At Duke University the graduate school offers an interdisciplinary program in biomedical engineering intended to combine engineering and biomedical course work with an interdisciplinary research topic. Also at Duke is the

[14]Dressel, *et al.*, *The Confidence Crisis*, p. 122.

program in comparative studies on Southern Asia which reveals not only the state of interdisciplinary work, but several of the serious problems. An initial grant from the Ford Foundation, augmented by support for South Asian language training from the U.S. Office of Education, enabled the graduate school to create a two-purpose undertaking: (1) to facilitate research on the political, historical, economic, and sociocultural development of Commonwealth countries in Southern Asia (India, Pakistan, Ceylon, Malaysia, and Singapore) and (2) to provide for the systematic training of graduate students in economics, education, history, political science, religion, and sociology-anthropology. Students matriculate in one of the orthodox departments but must satisfy, in addition to departmental requirements, a language competency and cognate courses in other related departments. Duke also operates the Center for the Study of Aging and Human Development for those who desire to pursue research training in some aspect of the behavioral sciences and psychophysiology of human aging and development. The center apparently does not offer courses itself but serves as a referral agency to bring students into contact with professors in the many relevant subjects.

Ohio State University offers a variety of interdisciplinary opportunities through centers which for the most part require that a student satisfy the requirements in a single department plus collateral work recommended by an interdisciplinary committee. For example, the Institute of Polar Studies will comatriculate students in agronomy, anthropology, botany, city and regional planning, civil engineering, geodetic science, geography, geology, physics, zoology, microbiology, and entomology. Students satisfy the requirements of their principal study and add such other courses as an institute-appointed committee recommends. Serving a more liberalized function at the same institution is the Mershon Center for Education in National Security which offers seminars to graduate students who are from a number of different disciplines and are interested in policy analysis—policy formation with respect to national security.

Little is published either by individual institutions or in the form of normative studies with respect to how large enrollments are in interdisciplinary work or where students are placed after completing degrees. However, several issues which must be solved if an interdisciplinary effort is to persist can be raised. First, how much of the core requirements of a traditional discipline should be required of a student pursuing an interdisciplinary degree? During the late 1940s and early 1950s the University of Minnesota and Michigan State University experimented with divisional Ph.D. programs which were

expected to provide interdisciplinary experience. These, for the most part, went unused because a divisional concentration in physical science, for example, required the candidate to repeat core requirements in both physics and chemistry, although he would finish with a degree less respectable and salable than a degree in one field alone. More recently, as programs in American studies have become popular, the same phenomenon seems to operate; thus the candidate actually receives the equivalent of the course work for a Ph.D. in American history and one in American literature, with the thesis being in one camp or the other. A related issue is what skills of inquiry, and at what level, are required for an interdisciplinary degree. This seems especially acute in fields such as history or sociology in which virtually all substantive courses contribute to methodological competence. To require a student in American studies to develop full historiographic competence equal to that of historians forces the old problem of a doubling or tripling of course work. Not to require such a level of exposure may leave the candidate without the skills needed for a thesis to be reviewed by historical scholars. Another issue is the danger that an interdisciplinary graduate student can so easily become a pawn caught between conflicting demands, insights, and aspirations of advisors representing several different fields. And then there is the problem of placing students in a market which still values a disciplinary degree over an interdisciplinary one.

But several other issues are also involved, the first of which has to do with maintaining loyalties of faculty members to interdisciplinary programs when their basic funding and institutional security rest with a department. This seems especially acute for younger faculty members who are not yet on tenure: they might be interested in offering interdisciplinary work, but they must face the rigors of scrutiny by departmentalists if they are to be promoted or granted tenure. This problem raises the larger problem of financing interdisciplinary programs. Prime instructional cost continues to be budgeted through academic departments, and faculty time devoted to interdisciplinary work must either be contributed by departments or paid for by some other agency. Interdisciplinary work flourished moderately during the late 1960s when foundation and federal support was available and centers, institutes and the like could purchase faculty time from departments. Now, when outside funds are not available, the situation is becoming critical.

Then there are two matters of quality. A number of graduate schools have created special graduate degrees for candidates whose interests are defensible but not congruent with any existing school or department. The normal procedure is for such a student to form a

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faculty committee which represents different fields and can determine appropriate patterns of courses and thesis requirements. One danger in this procedure is that the program will not reflect an underlying logic which is insured in more orthodox programs. A second danger is that if a single committee not responsible to a larger faculty both devises a program and assesses the outcome, high quality may not be maintained. Yet to impose all-university review committees and the like may make the interdisciplinary degree so bureaucratically complex as to discourage students from selecting that option.

Program Flexibility

Graduate education, as indicated by increasing use of interdisciplinary programs, is becoming concerned with the matter of flexibility. Its concern is paradoxical, however, in that forces and factors are pressing for both greater and lesser flexibility of program. Graduate catalogs indicate generally a few specific course requirements followed by more generalized regulations specifying a total number of course and seminar credits which must be accumulated before preliminary examinations. In actual practice there are probably covert requirements of specific courses reflected in such injunctions passed from student to student as that a candidate had better have taken such-and-such a course before coming up for preliminary or oral examinations. However, Heiss argued from her data that "most of the psychological stress and educational disillusionment resulting from too little independence seems to occur during the first year of graduate study when many students are locked into a rigid succession of courses and examinations."[15]

In American higher education a prevailing reform movement in the 1970s is toward greater flexibility and loosening of requirements, even to the extent of removing all requirements in some undergraduate colleges. The general education movement with its emphasis on requirements is on the decline. Institutions changing curricula tend to move from a prescribed general education course to a variant of the distribution requirement which allows more student choice, and then to some form of free election. The contemporary interest in ad hoc problems-oriented courses seems to have facilitated placing greater reliance on student choice. Similarly, in most of the professional schools there is a major swing toward a less tightly prescribed curriculum, a prime example of which is the argument in legal education that perhaps one-third of the program should be

[15]Ann M. Heiss, *Changing Patterns in Graduate Education* (Berkeley: Center for Research and Development in Higher Education, 1970), p. 5.

prescribed and two-third selected discreetly by individual students. Whether the concept of flexibility is currently endemic in higher education or whether genuine rigidity exists in graduate work is difficult to determine, but much of the reforming literature stresses greater freedom. Again, Heiss is indicative. She urged that "at the Ph.D. level programs of study should be individualized to the particular needs of the student, and the student as an investor should be responsibly involved in its design."[16] In an idealized sort of way she visualized the beginning graduate student articulating his ultimate goals and then planning a program which will make use of the full resources of the university to help him achieve those goals in a reasonable time. Recognizing that many students may have overstated the amount of effort required in their degree program, she nevertheless felt that facilitating a feeling of greater freedom would be wise. "The structure of Ph.D. programs should liberate the student from a preoccupation with grades, credits, course examinations and similar constraints which replicate his undergraduate role and experiences." And she cited, to illustrate her argument, a description of the Ph.D. student at Stanford:

> Having worked toward the degree by taking a requisite number of units, fulfilling specified requirements, achieving a certain grade average, passing qualifying examinations, and writing an often crushingly boring dissertation that passes as an original contribution to knowledge, the graduate student, his imagination probably restricted and dulled, his mind perhaps withered and exhausted, his soul jaded, dreamless and unwondering, his enthusiasm gone with his youth, is suddenly transformed by the magic of a degree into an educator charged with the responsibility of imparting to those who come after him the excitement of learning and a sense of the high adventure in ideas. Often he leads them no further than into the intricacies of the footnote.

However, the issue is somewhat more complicated. First of all, undergraduate curricula are changing so that students are able to select quite widely from existing courses and even in some institutions to create their own courses. While the virtues of independent study and selection have yet to be completely validated,[17] institutions continue to make provisions for variation, hence a student from a reforming institution could very well present himself to a graduate school with a curriculum vita created primarily by himself. Graduate departments might very well find such heterogeneity in the backgrounds of first-year graduate students that

[16]Heiss, *Challenges to Graduate Schools*, pp. 283, 284.

[17]Lewis B. Mayhew, "Can Undergraduate Independent Study Courses Succeed?" *College Board Review*, No. 79 (Spring 1971), 26-30.

they might need to provide some greater uniformity of first-year courses. The relationship of program structures at various levels of education is an important fact, albeit little understood. The free elective system in the late nineteenth century presupposed a prescribed high school curriculum (witness admissions requirements). The prescribed general education programs of the 1940s and 1950s were in part rationalized as necessary to insure a common set of learnings not provided by secondary education systems which sent only a small proportion of their graduates to college. Whether warranted or not, graduate departments in arts and sciences have acted as though they assumed basic preparation in a discipline produced by a strong academic major. Typical of this assumption is the statement for the botany department of the University of North Carolina at Chapel Hill:

> Although students applying for admission to graduate study in Botany should ideally have an undergraduate major in Botany or in Biology, including a substantial number of Botany courses, capable students with a Bachelor's degree may be accepted with the following minimal undergraduate background: General Botany and General Zoology (or an acceptable year course in General Biology) and a year of General Chemistry. A student with a limited undergraduate background in Botany and related Sciences should expect to spend more than the usual time on graduate degree work.

Now if the character of undergraduate education changes radically, as some urge, those assumptions of background may be called into question.

The issue is further complicated by other reforms being suggested for graduate education. If heavier emphasis on mathematics and computer science is to become part of the doctoral program of students in the social sciences, for example, and if doctoral work generally is to be restricted to a four-year period, as is frequently urged, pressures for more specific requirements will result. Especially would this be true if (as presently seems unlikely) postdoctoral work were to become institutionalized and established as a common mode by which research professors gained the sophistication now presumed to be provided by the Ph.D. The generally recognized postdoctoral program would suggest a more tightly prescribed Ph.D. program to insure the breadth of coverage claimed desirable for college teachers.

Then, too, the possibility of achieving the ideal of great program flexibility and considerable independent study experience is related to the size of graduate enrollments. Already in some of the largest graduate institutions, except perhaps in those sciences engaged in contract research, the number of graduate students in a department is

so large that the requisite individual counseling does not take place. Curricular requirements have always been a surrogate for sustained faculty counseling and guidance. If graduate enrollments continue to expand at rates anticipated, requirements may become necessary if only to insure adequacy of program for most students.

How much program flexibility there should be, of course, will vary according to disciplines. If the ideal of a four-year doctorate were to be realized, one-fourth of the total program in some form of core requirements would seem warranted.

> While this may sometimes delay the entry of the student into original research and thus delay his realization of independence and self-confidence, it also insures a Ph.D. with some measure of breadth, some exposure to the conceptual structure of his field at its frontier, outside the framework of a specialized research project. This tends to produce an individual of greater versatility, comfortable in moving outside the area of his greatest competence achieved in the course of the thesis. This flexibility is likely to become of increasing importance as national priorities change and the range of occupations entered by the Ph.D.'s increases.[18]

An overall distribution of one-fourth prescribed courses, one-third dissertation work, and the remainder electives with provisions for teaching experiences thus would seem defensible.

Course Proliferation

Possibly the most profound development in graduate education is the sheer magnitude and variety of courses available to graduate students. The reality of course proliferation and the almost exponential increases in knowledge can be tested by simply leafing through graduate catalogues of some of the major, and even quite a few of the minor, graduate institutions. So specialized are large numbers of courses listed in the various fields that it is difficult to reach any conclusion other than that courses are included in graduate programs chiefly as means by which professors express their current research interests. The variety is so great that it is impossible to conceive of any two graduate students in the same department coming out with a common set of experiences and a common point of view toward the subject. Now it may be that such intense variety and high degree of specialization is the essence and glory of graduate education. On the other hand, simply by applying some curricular principles evolved in connection with undergraduate education, one might reach the conclusion that proliferation of courses is responsible for escalating costs of education, but without any demonstrable educational

[18]Harvey Brooks, "Thoughts on Graduate Education," *The Graduate Journal* 8, No. 2: 321, 322.

validity. Earl McGrath[19] established that there was no positive correlation between curricular extent and departmental success or reputation. If the same could be demonstrated with respect to graduate curricula and serious limitation of courses undertaken, then time and resources for some of the other suggested reforms might be made available.

Work and Field Experience

Concurrent with attempts to devise more appropriate and relevant curricula are attempts to provide more practical experience. Within the professional schools there is a pronounced trend to require more clinical and field experience and to lodge it earlier in students' academic programs. As a general rule, graduate schools of arts and sciences have not emphasized such a development, with the two exceptions of attempts to provide teaching experience as part of a graduate program and, especially in the sciences, to provide realistic research experience. However, critics of graduate education have increasingly called for the production of more scholarly practitioners, which implies the possibility of work experience or field work during an academic program. Second, there is the combined phenomenon of rapid expansion of master's degree programs with a general belief that master's degree programs properly should focus on practical aspects of emerging problem areas. Graduate schools, particularly developing ones, anticipate that problem-centered master's degrees will be either one- or two-year interdisciplinary programs designed to equip a person to enter a specialized branch of the work force. Studies on urban problems, international affairs, water resources conservation, marine engineering, criminal justice, criminal rehabilitation and health care for the aged are illustrative. If such developments do indeed transpire, one can expect field work, clinical experience, or work experience to become central in the academic program. The likelihood that this may happen is enhanced by the growing popularity of cooperative education. Justification for cooperative education rests on the premise that every field for which students are preparing contains certain knowledge elements which cannot be taught in the classroom and must therefore be learned through on-the-job experience with professionals. A second premise, made especially poignant by the decline in graduate fellowship programs, is that most students must find employment, at least on a part-time basis, while they are in school; yet the jobs at which

[19]Earl McGrath, *Memo to a College Faculty Member* (New York: Institute of Higher Education, Columbia University, 1961); and *Cooperative Long-Range Planning in Liberal Arts Colleges* (New York, Institute of Higher Education, Columbia University, 1964).

students work frequently have no relationship to their career aims or to the academic program. Cooperative work-study education, then, satisfies the dual desire to provide income-producing jobs and at the same time to extend and amplify the learning process of students.

> Under a cooperative program the educational institution designs an academic calendar which allows the insertion of work periods at appropriate intervals in the curriculum. The institution assumes the responsibility for finding positions which are related to the student's professional objectives and which thus provide work experience that enhances knowledge associated with educational aims. These jobs are regular paying positions producing income by which students can finance their education.[20]

All of these factors imply that work experience of some sort may increasingly be the rule in a number of graduate programs both at the master's and doctoral levels.

While few examples currently exist, the general thrust of work experience is reflected in the policies of the University of Michigan. Required for certain graduate degree programs, the work experience consists of training and teaching or of doing research with considerably more of an applied flavor than is represented by the dissertation. It is presumed that all work experience requirements are established solely on the basis of their educational merit and are normally stated as a certain number of units of work experience. When part of a doctoral program, the requirement must be completed as a condition for candidacy. Departments wishing to make such a requirement must secure approval from the graduate school to insure that the program stresses educational significance.

Behaviorism vs. Scientism

Possibly influencing the call for relevant courses and work experience is the incipient revolt of some younger scholars against excessive preoccupation with behaviorism, scientism, and disciplinary elegance, although the long-term significance is difficult to gauge. Thus far, demands of dissident young Ph.D. holders for substantial change in curriculum or style of graduate education have not been effective; it may be that the sheer weight of orthodox scholarship is so great that movement toward more humanism in the disciplines and more action-oriented work can never come to pass. But the fact that annual meetings of learned societies have within the last several years been scenes of confrontation between younger and

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[20]Asa Knowles, *Handbook of College and University Administration* (New York: McGraw-Hill, 1970), Vol. II pp. 2-224.

older professors suggests some attention to the phenomenon should be given. Illustrative are some of the issues raised in psychology and in political science. A new breed of psychologists, humanistic and concerned with society and its problems, sees their graduate work as being socially irrelevant, with research problems successfully ignoring the big issues of poverty, race relations, and the like. So preoccupied has orthodox psychology become, they maintain, that it ignores essentially human concerns such as love or moral and ethical values. And younger scholars in political science criticize graduate programs for being parochially academic and avoiding real-life problems. Caricaturing orthodox scholars, a young critic has described the "ideal" type of beginning graduate student in political science:

> He should fulfill his language requirement with French or German, have math through calculus, an additional year of statistics involving some exposure to the computer; he should undertake some independent research project to demonstrate that he is the very model of a modern methodologist. He should maintain a high "B" average; he should, of course, be a Phi Beta Kappa and of some character and maturity. He need not waste time travelling abroad or consorting with politicians, administrators and other dubious types. He can learn about such matters in courses without leaving the campus. He may safely give up athletics, music, literature and campus activities. Above all, he should avoid community involvement or civic participation. It is not too important that he have the endorsement of his professors so long as he does well on their quizzes. He can manage this if he is careful to pick a college that is generous with A's and B's and does not give comprehensive examinations. He doesn't really need to learn much about politics and government for very few graduate departments screen applicants for substantive knowledge.

It may very well be that the yearnings for reform on the part of young professors will quickly fade and that their pleas for humanism and social relevance will be forgotten. However, Martin Trow, after comparing attitudes and values of graduate students, younger faculty, and older faculty, stated:

> It appears. . .that the academic profession is selectively recruiting those most hostile to its current practices: those graduate students who would give greater power to students, both graduate and undergraduate; those who feel that their field is too research-oriented; those who feel that big research centers are a threat to scholarship; those who feel that strikes are legitimate for faculty; those who do not feel that disrupters should be expelled in every

case. These are the graduate students most likely to enter college and university teaching.[21]

To the extent that these younger people can sustain their idealism, even the mighty bastion of departmentally-controlled graduate work could fall.

Other Modifications

There is a cluster of modifications, some potentially significant, which are exemplified in such a limited number of institutions as to preclude treating them as trends or tendencies. Thus at Yale the department of political science, which had required comprehensive examinations, now allows extended papers to substitute for the more formal examining procedures. The University of Wisconsin has authorized graduate credit for courses taken via television. New York University has created a four-course plan, which means that with fewer required courses, each course is strengthened and amplified in content. Thus a student completes eight courses for the master's and eighteen for the Ph.D. Because of its extensive work on computer-based education through PLATO, the University of Illinois is contemplating major increases in computer-based instruction for graduate level courses. Some graduate institutions (Stanford, New York University, Michigan State University, University of Chicago, and the University of Illinois) are making comprehensive studies of graduate education. The University of Washington in Seattle has inaugurated pass-fail grading for graduate students, who may take any advanced course in subjects outside their major on a pass-fail basis until receipt of candidacy. Thereafter, the student may take any course on the pass-fail basis. The George Washington University and the Library of Congress have created a new doctoral program in American thought and culture in which both institutions provide required seminars for the university's degree. The New School for Social Research maintains a graduate program which eliminates course credits, routine tests, and grades. Students take a single comprehensive examination at the end of three years of evening study and receive a master's degree for demonstration of mastery of the subject without regard for how knowledge was acquired. The program is designed for active workers in such fields as journalism, business, and government and for people not active candidates for the doctorate. Almost in anticipation of the university-without-walls concept, the Ohio State University has created graduate courses taken

[21]Martin Trow and Travis Hirschi, "Age, Status and Academic Values: A Comparison of Graduate Students and Faculty" (unpublished, undated manuscript).

via closed circuit television at the Wright-Patterson Graduate Center at Dayton.

Changes in the Disciplines

Reforms in some fields of the arts and sciences are in one sense repetitive of the experimentation and recommendations already indicated. It would be difficult, if not impossible, to report comprehensively or encyclopedically both because of the wide range of disciplines and subdisciplines in the arts and sciences and because of insufficient reports of new developments or recommendations for change. Compared with the professional associations of medicine, law, nursing, engineering and the like, the learned societies representing the arts and sciences have given scant attention to curricular content or instructional concerns. However, enough statements on such matters are available to provide something of the flavor of reforms being suggested and the shape of programs likely to emerge.

Mathematics and Quantification

A major reform, the significance of which is far from being perceived, is to introduce in some way mathematical, statistical, and computational skills to graduate students in an expanding number of fields. The argument is well known and is based on the conviction that modern technology would be impossible without mathematics and that every science, to a greater or lesser degree, makes essential use of mathematics. The exact sciences of engineering, of course, have long been allied with and their program dependent on mathematics. More recently in other sciences, including the social and behavioral sciences, mathematical applications have become so numerous as to demand quantitative sophistication on the part of professionals in those fields. In one way or another, mathematics can be applied in virtually every science from mechanics to political economy. Whaley has illustrated the shift in the nature of some of the nonphysical sciences which seemingly require more skills in quantification.[22] He described his professors as "observers, catalogers, and categorizers, and their purpose was to absorb and then transmit to their students the vast body of accumulating knowledge of organisms which, if properly ordered, would let them after some years reveal some new relationship or some new organisms or some

[22]W. Gordon Whaley, "New Trends in Graduate Study in the Biological Sciences" in Everett Walters, *Graduate Education Today* (Washington: American Council on Education, 1965), pp. 202, 204.

new state in a life cycle. Their most important tool [was] an apochromatic light microscope...which they learned to use with great effectiveness." That older scholar who attempted to comprehend the whole field of biological knowledge has been replaced by a problem-solver who entered biology because he was aware of many discrete problems or ones which could be made discrete. This new scholar "is far more the technologist than his predecessor and he has at his command an expanding number of techniques from the physical sciences and even engineering, combined with a high respect for, if not directed knowledge of, the application of instrumentation to biology, particularly electronic instrumentation." This new biologist requires a basic graduate education which will be strongly physical science-oriented and concerned with basic principles and experimental models. "The current understanding of energy relations of cells and organisms would not have been possible without such a basis....By combining several physical science approaches we can now often relate function to form even at the molecular level."[23]

Not only have biology, geology and astronomy moved from descriptive to analytical postures, but increasingly so have at least some portions of subjects generally subsumed under the heading of the social and behavioral sciences. To the extent this happens, there appears a need for mathematical training of a reasonably high order. Illustrative of what is increasingly characteristic of such fields as psychology, sociology, and political science is the viewpoint of the behavioral and social sciences survey of history. After severely criticizing graduate training in history for ignoring methodology in favor of massive emphasis on substantive knowledge of history itself, the panel set forth a series of recommendations. They recommended explicit and systematic instruction in problems of research design, formulation of hypotheses, logical requirements of proof, and the selection of appropriate techniques. Further, historians-in-training should be exposed to the conceptual frameworks and research methods of other social sciences. Especially should students be involved in the creation, collection, and interpretation of sources that are valuable in the study of problems of social scientific history.

> Departments of history should, like the other social sciences, recognize the status of mathematics, statistics, and computer programs as languages, and should, where desirable, oblige students to learn these in addition to the foreign languages conventionally required.[24]

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[23]*Ibid.*, p. 210.

[24]David S. Landes and Charles Tilly, *History as Social Science* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), p. 91.

It should be recognized that quantification and mathematical training in the social sciences have not been completely victorious. There are those who agree with Andrew Hacker that:

> What must be abandoned is the hope that political analysis can be either objective or scientific. The underlying method of the natural and physical sciences is inapplicable to political study.
>
> What is wanted is more subjective analysis, more individual scholarship and more research that is highly personal in conclusion and design. Each student of politics must describe the world as he sees it, holding on to the faith that his perceptions and evaluations are valid.[25]

Martindale was even more caustic in his argument:

> When one examines the bizarre array of pseudo-mathematical formulas, mathematical notations without content, and mathematical models designed for purely hypothetical situations, one can only conclude that it is among the ranks of those who often claim to be the true spokesmen of science that the contemporary heirs of Plato are to be found.[26]

Nonetheless, the predominant opinion is that quantification will be increasingly important in most fields and that future practitioners must be suitably prepared. The big questions of preparation are where and how. James Conant and a few others would place the responsibility for intensive preparation in mathematics on the secondary schools and a few highly demanding undergraduate colleges. He believes that the nation's needs for highly qualified doctors, lawyers, and Ph.D.'s could be satisfied with no more than 40 to 50 universities which would draw their students from a similar number of undergraduate colleges. With close cooperation between these two, the universities would be in a strong position to enforce demands that undergraduate colleges provide rigorous training in mathematics and other academic tool subjects as evidenced by a rigorous examination system. In spite of this scheme's logical elegance, nothing in contemporary patterns in elementary and secondary school education, nor in undergraduate education, suggests that such a scheme is likely to become a reality. Thus the graduate school itself must assume obligation for quantification skills. Probably requirements of a full-year sequence in statistics and one term or semester in uses of the computer would be minimal in any subject remotely claiming to have quantification as reasonably

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[25]Andrew Hacker, "Mathematics and Political Science," in *Mathematics and the Social Sciences* (Philadelphia, American Academy of Political and Social Science, 1963), p. 69.

[26]Don Martindale, "Limits to the Uses of Mathematics in the Study of Sociology" in *Mathematics and the Social Sciences*, p. 120.

central. Most engineering schools and many physics and chemistry departments already require all students to complete at least one elementary course in computer programming. The biological sciences have been somewhat slower in establishing this requirement, but are beginning to show interest. For example, Washington State University now offers as part of the information science curriculum a course entitled "Modeling and Simulation of Biological Systems," which is being examined as a prototype for use elsewhere. Similarly, the behavioral sciences have made an impressive swing toward the use of computers and consequently require students to develop requisite skills.[27]

Social and Behavioral Sciences

The social sciences, broadly conceived, have been characterized by (1) a rapid rise of new disciplines and subdisciplines, (2) a much greater emphasis on scientific analysis using powerful new mathematically-based research tools, and (3) a much greater concern with the social systems and cultures of non-Western civilizations. These changes, coupled with impressive increases in the average annual numbers of Ph.D.'s awarded, have produced a cluster of fields which almost fibrillate with dynamic activity. The sheer rapidity of proliferation of subdisciplines and the rise in significance of interdisciplinary fields of training have, of course, placed serious stress on institutions purporting to offer broad coverage in the social and behavioral sciences. This has led at least some institutions to specialize, even if this meant excluding some traditional fields. It has also led to the development within a given institution of a critical mass of professors who are from several different social sciences and who are each interested in the same phenomena. Thus, if economists at an institution were interested in economic development, then political science, sociology, and history could be oriented to reinforce that bias. A good case in point is Stanford University, which has begun to stress organizational theory through key but somewhat redundant appointments in the school of education, the departments of political science and sociology, and the graduate school of business. As the social and behavioral sciences have broken away from moral philosophy and history, they have increasingly placed emphasis on scientific method and analysis, with concomitant shifts of emphasis in graduate training away from substantive content toward a study of research methods. Partly by virtue of that

[27]Don D. Bushnell and Dwight W. Allen, *The Computer in American Education* (New York: John Wiley & Sons, 1967), pp. 163, 164.

development and partly by virtue of funding for large-scale research centers, a considerable part of research training is now, and is likely to be in the future, a group activity. Centers such as the Columbia Bureau of Applied Research, the Michigan Survey Research Center or the Harvard Social Relations Laboratory have also produced considerably greater interdisciplinary flavor than they would have been likely to produce doing individual research and training graduate students. Gradually, these centers are also turning their attention to non-Western cultures and providing area programs which eventually will become complicated interdisciplinary efforts.

Both a complicating and a stimulating factor is that social scientists are no longer primarily oriented to enter university teaching and research. They now have access to positions in government, industry and private research organizations, and—importantly—in professional schools. The various fields, therefore, will need to rethink the structures of programs and decide whether to create several tracks or to continue assuming that the basic doctoral program is appropriate regardless of vocational destiny.[28]

Sociology

Several of those themes are elaborated in the specialized reports emanating from the behavioral and social sciences survey committee of the National Academy of Sciences. For example, the report on sociology noted the superficiality of coverage in sociological theory courses and the inadequacy of training in mathematics, statistics, and computer skills. It also pointed out substantial weaknesses in faculty advising and in the tendency to teach first-year graduate students in large classes of 75 to 100 students. To rectify these and related deficiences a number of recommendations have been advanced. Core courses of sociological theory may seem desirable requirements for either undergraduate majors or graduate programs. Once students have completed the core of general background, branching into one of several reasonable specific subspecialties would be appropriate.

Because of heightened social awareness of college students in post-World War II decades, there has been tremendous expansion of graduate enrollment as students seek assistance from the social and behavioral sciences to solve social problems. A genuine overexpansion of the field of sociology has resulted and should be alleviated by much stricter admissions standards. Once highly qualified graduate students have been recruited, their programs could be quite

[28]This summary is based on John Perry Miller, "New Trends in the Social Sciences" in Walters, pp. 171-184.

prescriptive in the sense of all having common methodological, statistical and core theory training as well as exposure to the use of computers and explicit training in interdisciplinary work. Although there is a tendency for more and more social and behavioral scientists to secure employment outside universities, still the larger proportion receive appointments to colleges and universities. This fact leads to the need for more specific attention to the preparation of teachers through teaching apprenticeships and seminars in pedagogy.[29]

History

Similar elements are stressed for graduate work in history, but perhaps more forcefully because it has typically emphasized development of substantive knowledge. Graduate students in history receive virtually no training in methodology except that which is inherent in accumulating pieces of knowledge and developing a level of writing competence through a thesis defined in quite traditional ways. For the most part, graduate students in history have not taken course work outside the field of history, and one gets the impression that faculty members have actually discouraged graduate students from seeking intellectual contacts outside the pale. The general picture cou'd be summed up thusly:

> Present methods of graduate instruction in history assume the creation of a particular type of historian and therefore of a particular type of history. That historian is one who is broadly knowledgeable in the substance of a number of times and places, more or less competent in foreign languages (one could write a book about the credibility gap here), proficient in the technical analysis of documents and particularly responsive to the work of scholars in literature, art, history and political theory. He is not ordinarily responsive to the substance of knowledge or research procedures developed in the other social sciences, does not have the conceptual tools needed to produce truly comparative history, lacks the quantitative techniques needed to control the large masses of data indispensable to the analysis of many problems in social history, and lacks the knowledge of both economic and social theory and of research methods that would allow him to undertake historical research designed to test the adequacy of existing theory or to add to existing theory.[30]

Such a condition should be corrected by several major curricular reforms. Graduate students, as indicated earlier, should have extensive experience with research design and with the conceptual

[29]Smelser, *et al.* See also chapter iv.

[30]Landes and Tilly, p. 89.

frameworks and research methods of other social scientists. Obviously, if tighter research design is to be fostered, all students should be required to develop sophistication in mathematics, statistics, and computer programs. To this end, both as symbol and of intense substantive significance, departments of history might consider appointing mathematicians, statisticians, and computer specialists to part- or full-time appointment in history departments. And, to upgrade the research and conceptual tools of both students and practitioners, departments might very well consider summer workshops, institutes, and the like. Second, the department of history should introduce larger numbers of courses defined by themes and problems (for example, war, urbanization, or power), even if this means removing some of the traditional courses which treat of space and time. And third, departments should facilitate collaborative instruction by faculties from more than one discipline and should be much more willing to cross-list history courses. This concern for interdisciplinary work should be more than just permissive: students should be permitted to take at least half of their course work outside the field of history.

Social psychology

Disciplines which have themselves evolved from interdisciplinary effort reveal some of the same problems and suggest some of the same modes of reform as do the older disciplines. Such a discipline is social psychology, about which Gordon Allport could say:

> While the modern social psychologist does indeed need experimental, statistical and computer skills, he needs also historical perspective. He needs immersion in theories (both macro and micro). Above all he needs an ability to relate his problem to the context in which it properly belongs. Sometimes the context lies in the traditions of academic psychology, often in sociology or anthropology, sometimes in philosophy or theology, occasionally in history or economics, frequently in the political life of our day; sometimes the science of genetics or clinical experience provides the context. In short, although social psychology has its own body of history, theory, problems and methods, it is not a self-sufficient science. It thrives best when cross-cultivated in a rich and diversified intellectual garden.[31]

Programmatic reforms in social psychology thus are intended to achieve that cross-cultivation. It has been axiomatic with respect to

[31]Quoted in Sven Lundstedt, *Higher Education in Social Psychology* (Cleveland: Case Western Reserve University, 1968), p. 18.

undergraduate education that the peer culture was the most significant educational force in operation, and increasingly it is recognized that the same phenomenon operates at the graduate level. However, utilization of the relationship of students to each other as an explicit teaching device has not been well organized. Explicitly dividing students into relatively small groups which will persist over time or encouraging students to create their own small groups should be attempted, not only because it is a good general pedagogical principle, but also because it is significant of interpersonal action for social psychology itself. If, then, these peer groups are related to several different professors, a device for true interdisciplinary work would be at hand. These small groups should be given some overall cohesiveness through requirements of core courses or pro-seminars which would present the common learnings all graduate students in social psychology should know. As to how to select these materials, some rational curricular design strategy should be used—whether it be the classic one created by Ralph W. Tyler (formulation and specification of objectives, contriving learning experience and conducting systematic evaluation) or a design stressing continuity, sequential presentation, and integration is less material than that some design strategy be used.

Underlying these suggestions is a generalized faith in some degree of course prescription for all students. Some students are bothered by large numbers of requirements while others are dissatisfied if there are too few requirements. A final solution will be a balance between freedom and prescription, with the possibility that individual institutions may differ substantially as to how much of each will be tolerated or encouraged. At one institution, for example, there is but the single requirement of statistics coupled with the necessity to pass a preliminary examination based upon nine core courses. Students presumably could prepare for the examination by themselves or by taking the core. That scheme does not violate the faith in prescription. While a core of courses serves some guidance function, greater attention to advising and counseling is an imperative if students are going to finish with a coherent program of study. In addition to these matters, all graduate students in social psychology should have some field training appropriate to each student's professional aspiration. Furthermore, the doctoral program should pay some attention to developing interpersonal skills on the part of incipient social psychologists. Graduate programs have concentrated only on intellectual skills too often in the past. Interpersonal relationships are so much a part of the professional credentials of a

social psychologist that specific training (very likely in small groups) must be expected.

Along with the strategy for curricular design should be used detailed understanding of the ways in which social psychologists are likely to be employed. Recognizing that not every program can train people to fit the entire range of possible roles, the discipline may take one of two major lines of development: one would stress broad generic training and the other would begin specialized training almost from the point of entry into a doctoral program. The broad generic training before specilization seems much more relevant because it should prevent obsolescence and should make trained social psychologists able to shift as markets for their services change.[32]

Computer science

Another emerging field, interdisciplinary in its origins, is computer science. Generally graduate programs in computer science posit several goals which include training effective workers, preparing computer designers or systems architects, preparing people who can use computers in new situations, and preparing a select few in theoretical aspects of computer science and relevant subjects. Generally the required and elective courses necessary to accomplish those four goals are agreed upon. They would include such things as introduction to algorithmic processes, computer organization and programming, numerical analysis simulation, and heuristic programming. Thus neither the purpose nor the specific courses offer a substantial problem. What is vexing is the selection and organization of faculty and the identification of feasible research problems which will both lead to the Ph.D. and be of sufficient applied character to contribute to the specialist's education. An elaboration of such problems suggests several matters having curricular significance. The first concerns the intellectual respectability of computer science as an independent discipline. The skepticism of some (which is a skepticism expressed about a number of other emerging fields) can be phrased as follows:

1. Why should there be a special graduate (let alone undergraduate) program in computer science any more than in the use of any tool such as in electromicroscopy?
2. Almost all creative computer designers and program inventors have been trained either as pure mathematicians or as experimental physicists.
3. The training of faculty and students in computer usage can better

[32]This resume is based on Lundstedt, pp. 231-247.

be done by those in the various disciplines who have acquired computer experience than by a separate cadre of computer scientists.

4. Is it not the business of universities to train computer center managers or systems experts?

5. Computer science is not a coherent intellectual discipline, but rather a heterogeneous collection of bits and pieces from other disciplines, including analysis and differential equations, linear algebra, mathematical logic, linguistics, information theory, decision and control, automatic control theory, systems analysis, and so forth.[33]

Second, the matter of staffing transcends the obvious shortage of experts in a very young field. At present the field is so much in flux that the truly outstanding computer scientists who would be needed to staff a fullblown computer science department are difficult to identify. Related to this problem is the question of whether computer science programs should be organized as separate departments or as subordinate parts of more orthodox departments. While there is still no agreement on this matter, there seems to be general agreement that no intellectual discipline represented in a university today has quite the interdisciplinary character of computer science and that this should be recognized in whatever organizational structure is proposed.

Natural sciences

Although organizations in the natural sciences are even more taciturn with respect to changing graduate work, a few recommendations do crop up in conference proceedings or statements of scientists turned educators or administrators. For chemistry, the International Conference on Education in Chemistry criticized the excessively narrow Ph.D. program and called for increasing the breadth for permissible Ph.D. programs within chemistry and for encouraging students to take work in other fields. In part this suggestion resulted from a growing demand for adaptability by possessors of graduate degrees. This should not be attempted indiscriminately, however. There should be deliberate planning of course structures and curricula which expose students to basic information in other fields, and careful articulation courses with those in other fields, to improve the interdisciplinary character of chemical training. Also the focus of chemical engineering should shift to concern students with practical problems underscoring the relevance

[33]Aaron Finerman, *University Education in Computing Science* (New York: Academic Press, 1968), p. 45.

of chemistry for society's welfare and preparing them for the nonacademic careers which will comprise the larger fraction of employment openings in the chemical sciences.[35]

Within biology there is the growing need to make it physical-science-oriented and thus concerned with basic principles and experimental models. Since the normal graduate program does not really allow enough time for the physical science components, biology would be well served to recruit undergraduate physical science majors and interlard that preparation with graduate work in the biological sciences. Specific course work should be designed to increase the student's awareness of his discipline's relation to other disciplines and to the society. Thus,

> Graduate training must emphasize broadening concepts of science and particularly the interdisciplinary nature of many science frontiers. Biology, for example, can no longer be regarded as a pure science. The horizons of molecular biology, psychobiology and ecology require that the young biologist have a much more sophisticated understanding of the physical sciences and mathematics than ever before. Likewise, in mathematics there is a growing need for scholars and teachers who can apply mathematical concepts and techniques to problems in the social sciences.[36]

Then, too, the relationship between pure and applied research and scholarship needs to be stressed with perhaps more problematic applied emphases. This would be consistent with the need for seminars or classes on the problems of science and society or science and government, but the research emphasis cannot be ignored. Biologists are a little uncomfortable that such a small proportion of their numbers contribute the large bulk of research papers. In some way or other, research training at the doctoral level should be arranged to equip and inspire younger scholars to continue creative research.

Humanities

The broad domain of the humanities provides another variation on the themes made explicit thus far. There is a strong trend toward interdisciplinary study and a growing acceptance of interdisciplinary degrees (e.g., American studies). This is a relatively recent phenomenon and seems to have grown out of the World War II-spawned interest in area studies in which language, geography,

[35] American Chemical Society, *Preliminary Report, International Conference on Education in Chemistry*, July 20-24, 1970.

[36] *The Graduate Preparation of Scientists for Undergraduate Teaching in Liberal Arts Colleges and Universities* (Washington: Association of American Colleges, 1970), p. 43.

history, politics, economics, sociology, and literature of a given country or region are intensively studied. Once departmental barriers have been crossed, there have been other interesting pan-disciplinary approaches; for example, the burgeoning programs of folklore studies. History, normally resistant to change, has begun to offer work in the history of culture, law, medicine, religion, and science: two universities have made joint appointments in their schools of medicine and history departments to facilitate research in medical history. Of a different order has been the gradual assignment of graduate respectability to performance in the fine and performing arts. In the past, fine arts departments have for the most part agreed that the Ph.D. degree should be reserved for research-oriented activities in such areas as the history of art and music, theatre and so forth. However, increasingly the Ph.D. will be authorized for a creative statement or performance of high professional quality. In spite of these episodes of reform,

> it cannot truly be said that all is well with the Humanities. There is a pervasive spirit of uncertainty and insecurity, almost a sense of futility. There is an uneasy feeling especially among younger scholars that contemporary, materialistic society neither needs nor wants the contribution that the humanist makes. Above all, the humanist feels himself overshadowed by the natural scientist and even by the social scientist who has learned to copy the other's technique. As a result he feels himself reduced to second-class citizenship, if not in the academic community, then in the community at large.[37]

One would have thought that out of such frustrations would have come more intensive experimentation. If experimentation is taking place, the examples are well concealed.

Ethnic, Women's and Urban Studies

Ethnic studies

One change in graduate education is at once so significant as to require separate discussion and so uncertain in its future that predictions for long survival and incorporation into the main intellectual current in higher education cannot be assessed. This is the sudden demand for the appearance of ethnic studies, with black studies the first of the genre to appear in appreciable quantity. The rationale or justification for black studies has several parameters. First there is the contention—beyond doubt justified—that many of the courses taught in colleges and universities have been restricted to

[37]Gustave O. Arlt, "New Trends in Graduate Study in the Humanities," in Walters, pp. 199, 200.

a Western European experience and have not given adequate attention to Africa, the Far East or even the experience and contributions of Negroes in American civilization. Much of polemical literature calling for black studies is full of references to dramatic omissions. The role of Negroes in the American military has never been properly described, nor have the artistic elements deriving from Africa and finding their ways into American artistic statements been adequately traced and elaborated. Sociologists have not studied the growth of the Negro middle class, nor have literary scholars exploited a rather rich literature written by Negroes. However, in addition to a demand to redress scholarly imbalance, black studies are hailed as a means of assisting American Negroes solve their identity crisis. Through black studies, Negroes can develop a sense of pride in black identity which sense, among other things, will allow them to combat pervasive racism in the society. For Negroes searching for a viable mode of black separatism, a full corpus of black studies can establish both a link with an African tradition and bridges to black populations in many parts of the world. Further, a program of black studies is seen as an important tie between black students and faculty and the larger Negro community, a tie which, in the long run—it is hoped—will generate enough political and economic power to enable Negroes to compete satisfactorily in American society. Another explanation, although not advanced by supporters of black studies, is that the studies represent another manifestation of student protest and dissent with the attendant cries for curricular relevance.

Whatever the validity of the rationale may be, undergraduate programs in black and other ethnic studies are expanding and, consistent with American curricular history, are forcing the creation of graduate programs at both the master's and doctoral levels. Examples of these programs are instructive and are indicative of potential tendencies in graduate education. As is true of other interdisciplinary fields, the overall model for ethnic studies is probably the area studies developed during World War II to provide military personnel a broad overview of the regions in which they would likely be serving. Thus most of the programs in existence for black, Chicano, or other ethnic studies draw heavily on some of the humanities and on the descriptive social and behavioral sciences. The overall rationale for black studies and their content is exemplified by the program at the University of Washington at Seattle. There an approved interdisciplinary major in black studies explores a substantial segment of human experience previously neglected by the university. The major draws on many departments in the social sciences and humanities, and is not considered an isolating educational experience for those who enter it either as teachers or students. The

program is for all students and seeks to achieve several objectives. The substance of the black experience was assumed to be intellectually valid and the study of it its own justification. In addition, planners of the program hope it will increase the self-awareness of black students concerning their own history and culture. The major should prepare students subsequently to teach in primary and secondary schools or to serve in governmental and private agencies with minority concerns. Last, a bachelor's degree in black studies could serve as a background for persons wishing to do graduate work in the social sciences, the humanities, or law and other professional schools. The program consists of the orthodox core courses, intermediate level courses and upper division courses and seminars. Generally, students are expected to take courses in a number of different departments rather than concentrate in one. The flavor and thrust of this interdisciplinary black studies major is suggested by the courses offered:

The Literature of Black America
History of Jazz
Philosophy and Racial Conflict
Afro-American Culture
Mental Health for Minority Groups
The American Negro Community
Human Biology of Sub-Saharan Africa
West African Societies
Basic Swahili
Bantu Linguistics
History of South Africa
Music of South Africa
Government and Politics in Sub-Saharan Africa
Comparative Social Systems: Africa

In addition to such specific courses the organizers of the program encouraged other university departments, especially those in the college of education to integrate black materials into their course offerings.

A similar pattern is found in other ethnic studies programs. At the University of California at Davis, a program in native American studies is being developed with several major components:

1. Native American literature, including ancient Mayan texts, oral literature and the considerable body of literature written by non-Indians about Indians.

2. American Indian legal political studies, stressing such things as the Constitution of the Iroquois, the legal-political experience of the Cherokee Republic, and American Indian law.

3. Native American arts, underscoring Indian contributions in basketry, ceramics, weaving, painting, woodcarving and sculpture.

4. Native American religion and philosophy, which would at least consist of three broad geographic areas: Meso-America, South America and North America.

5. Native American education which would explore the wide range of problems of schooling for Indians.

6. American Indian languages.

7. American Indian tribal and community development.[38]

Similarly, Chicano studies are rooted in the social sciences and humanities. At the University of California at Santa Barbara a two-year program is based on history and language studies, with such courses as English for Chicano students and Spanish for Chicano students being the tool subjects. History was deliberately chosen because it could provide continuity between past and present and could provide the most comprehensive approach to the totality of the Chicano experience.[39]

In order to prepare teachers for these burgeoning programs of ethnic studies, and to produce the research and scholarship needed ultimately to enrich curricular offerings, graduate programs are beginning to appear. For the most part, these programs culminate in the master's degree, but in a few places they serve as preparation for doctoral degrees. Those efforts which are either planned or in existence bear a striking resemblance to undergraduate ethnic studies. Thus, Atlanta University offers a cross-disciplinary M.A. program in Afro-American studies, administered by its Center for African and Afro-American studies. The requirements are the general ones for the school of letters and science: a minimum of 24 hours of course and seminar work, a general examination and a master's thesis. All students are required to take introductory courses on African societies and Afro-American culture, seminars on Afro-American culture, and a course entitled "The Black Man in the New World." The California State College at Fresno offers a professionally oriented M.A. degree in La Raza studies. For example, essential courses are "Graduate Survey of Trends in Ethnic Studies," "Research Methods in Bibliography and in Field Work," "Parameters of Chicano Urban Demography," "Farm Labor Migration," "Labor Organizations," "Historiography and the Chicano," and "Concepts of La Raza." Colorado State College offers an M.A. in cultural studies. The

[38]Jack D. Forbes, "Native American Studies," in Robert A. Altman and Patricia O. Snyder, editors, *The Minority Student on the Campus* (Boulder: Western Interstate Commission for Higher Education, 1970), pp. 168-169.

[39]Jesus Chavarria, "Chicano Studies" in Altman and Snyder, p. 177.

University of California at Riverside offers a Ph.D. program in "The History of Black People and Race Relations in the United States," and both San Jose State College and San Fernando Valley State College are offering master's programs on Chicano studies.

As master's programs have become operational, they have underscored deficiencies which can only be rectified through doctoral work in ethnic studies. There is an urgent need for the training of increased numbers of minority faculty to staff undergraduate ethnic studies programs. Further, there is a vital need to conduct research and analysis at the graduate level, the findings of which can be used in the development of course content and teaching materials. Hence, two major forms of doctoral work are being suggested:

> 1. [One structure] includes approximately two years of advanced study in graduate courses in the subject field comparable to those for the Ph.D., but allowing for breadth rather than specialization. Approximately a third year is devoted, though not necessarily sequentially, to selected options designed to broaden background and relate to college teaching. Examples include: study of adjacent subject areas; special problems in curriculum in the subject field; background courses in learning, educational psychology and sociology, and higher education; research techniques in education; a practicum in traditional and new teaching techniques and educational administration. About half of the fourth year is devoted to preparing a dissertation that may consist of an analysis or synthesis of a significant phase of the subject field, or to a project in applied research, such as the development of curricular materials and their testing in a classroom situation. In the remaining half of the fourth year, the candidate participates in a full-time college teaching internship and a related teaching seminar. This program culminates in the Doctor of Arts.
>
> 2. [The second variant of a doctorate in ethnic studies will be that found in more research-oriented universities. This will follow the] established pattern of the Ph.D. in a traditional discipline with concentration upon U.S. Ethnic Studies in advanced courses and seminars and dissertation research. . . . This is not to say that the new focal or interdisciplinary doctorates should not be considered for U.S. Ethnic Studies. New programs of doctoral study are being introduced each year, but typically only after growth of the field to the dimension of a disciplinary identity.[40]

Very likely, the number of Ph.D.'s in ethnic studies for a few years will be somewhat limited and the emphasis will generally be placed on degrees to prepare teachers.

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[40]H. W. Magoun, "The Preparation of Faculty in U.S. Ethnic Studies Fields," *Graduate Education and Ethnic Minorities*, p. 83.

Women's studies

Another movement, which may or may not result in a new tangent for graduate education, is evidenced by the creation of women's studies, estimated by some to be offered on 55 or more campuses. Women's studies originate from some of the same patterns that produced black studies and generally experience the same problems which black and ethnic studies have experienced. Should men be excluded from teaching? Should women's studies be a separate department, an interdisciplinary program, or simply a scattering of courses? Can women's studies be primarily academic, or are they sure to become militant and tied to women's liberation? Most women conducting such efforts favor a separate department of women's studies; a few believe that separatism or interdisciplinary courses will put women's studies in a second-class position.

Urban studies

Similar to the social origins of ethnic studies is the rapidly expanding concern for urban studies. Interest took an upward turn when violence in the ghetto reinforced the point that urban centers were degenerating to an almost unlivable condition. Once the crucial characteristics of a cluster of urban problems have been revealed, universities have taken any of several different stands. A few have created urban research centers to deal with urban problems or to supplement city planning programs which, until recently, were generally housed in schools of architecture. Others encouraged traditional departments to add some course work and research emphasis to urban manifestations of traditional subjects. While each of these approaches is somewhat fragmented (reflecting quite precisely the fragmentation in the university or in society), more and more institutions are searching for interdisciplinary approaches to urban problems, a curriculum which concentrates on the city in its totality and which can draw on the content and methodology of many different disciplines. For such an interdisciplinary effort to succeed, field work must be an essential ingredient not only as a learning experience but also as a means of exposing problems susceptible to research.

Unlike ethnic studies, which witnessed the biggest flowering of course offerings as undergraduate study, urban studies as graduate programs appear much more prevalent. This may be because of the serious difficulties in mounting interdisciplinary programs at the undergraduate level where faculty and authority over courses reside in traditional departments. And at the graduate level, the most

significant trend in urban studies programs is a clear movement away from the city planning focus with its strong emphasis on physical factors toward a multidisciplinary approach which can accommodate social and behavioral sciences perspectives. Like so many other developments described here, no meaningful evaluation of varying approaches can be made because of the very recentness of the movement. However, the range of what is being attempted is revealed in a number of different institutions.

The University of Pittsburgh master's program in urban and regional planning, part of the Graduate School of Public and International Affairs, allows students to elect a professional emphasis in urban planning or regional development planning or to elect a broad, more theoretical program emphasizing systems analysis, research methods, and community political systems. Students select course work from among eight core courses in the Graduate School of Public and International Affairs, and the entire program requires four semesters of course work and a thesis. Other related graduate programs are available in public administration, which focuses on urban ecological conditions; in urban community development administration, which stresses action research; and in urban executive administration, which is intended to prepare students for central administrative positions in urban-related agencies and bureaus.

The program in metropolitan studies at Syracuse University is located in the Maxwell Graduate School of Citizenship and Public Affairs and is quite similar to the basic program at the University of Pittsburgh. However, the Syracuse program does not grant degrees, thereby leaving the actual conferment of degrees to the more traditional concentrations.

Reflective of much current thinking about graduate work in urban affairs is the program in city planning at the Massachusetts Institute of Technology:

> The evolution of the Department of City and Regional Planning at the Massachusetts Institute of Technology illustrates the broadened outlook on physical planning that the increasingly social and cultural nature of city problems is forcing upon many of the nation's professional schools of planning. The graduate department of city and regional planning is thirty-five years old. Its initial enrollment was restricted to architects. One-third of the present enrollment is now made up of architects and engineers, the remainder from other fields. The traditional concerns of physical planning have been supplemented by the issues of unemployment, race and sociological and political alienation. The research arm of the department, the Laboratory for Environmental Studies, embraces four divisions which correspond to the directions in which the department has

evolved: race and poverty, quality of physical environment, underdeveloped countries and regions, and information systems for decision making.

The Department has abolished all course requirements. Each candidate for a Master's or Doctorate in City Planning plans his own program with the help of a faculty adviser. The course requirement now states that each student is expected to develop (1) a general understanding of contemporary urban society and its major components, social, economic, spatial and political, (2) skill in the techniques for analyzing urban and regional communities, their social and economic characteristics, spatial patterns, political structure, behavioral impact and processes of change and (3) skill in the synthesis of development policy, including the statement of the problem, the formulation of objectives, the generation and evaluation of alternative plans and policies; implementation and the monitoring and adjustment of action.[41]

The University of Wisconsin at Milwaukee has long described itself as an urban institution and has given curricular expression to its interest in urban affairs. Its graduate department of urban affairs was established in 1963 and has manifested a steady growth since then. As a separate department tied to the College of Letters and Sciences and to the graduate school, it is more able than are traditional departments to provide graduate students a base for urban-focused work. The program tries to train urban affairs generalists who are able to bring theory to bear upon practice and to proceed with wise pragmatism when theory is lacking. The program is interdisciplinary, stressing social, economic, and political aspects of urbanization, and policy decision making. All students are required to take a core of courses; however, there is some thought that most of these prescriptions should be eliminated.

Also in 1963 the University of Chicago established a center for urban studies to coordinate existing research at the university, to conduct classes, and to initiate field studies and applied research. The center intended to resolve contradictions between specialization and generalization by recognizing both interdisciplinary and disciplinary needs. The general point of view of the center rests on the conviction that neither city planning nor the mastery of one particular discipline can provide the skills needed to solve contemporary problems of the city.

In the former case the emphasis is upon the physical development of the city and technical subjects such as traffic and circulation, land

[41]Joseph G. Colman and Barbara A. Wheeler, *Human Uses of the University* (New York: Praeger Publishers, 1970), p. 128.

> uses, density and design. In the latter case, the student, although later he may become a key city administrator, is trained as a specialist in the field of his choice, sociology, economics, divinity education, architecture, social work, or law—concentrating on specific urban problems from the vantage point of his specialty. Neither avenue provides a student with coherent, organized understanding of the many forces affecting and affected by the complex urban structure. Consequently, the resulting failure in professional performance, achievement and response have demanded a re-evaluation of the urban practitioner's academic preparation.[42]

A fundamental difference between ethnic and urban studies is that urban studies research has flourished and in many ways has produced subsequent teaching missions. Several examples may indicate the nature of the research effort. The joint center for urban studies at the Massachusetts Institute of Technology undertakes both basic and applied research projects, including such matters as historical roots of civil disorders and insurrections, school desegregation, urban delinquency, and welfare. The Boston College Institute of Human Sciences and the Washington University Institute for Urban and Regional Sciences not only conduct research but maintain a teaching component as well.

> At Boston College the research, educational and demonstration projects of the Institute of Human Sciences are thought of conceptually as falling under one of the five programs now in operation. The rationale for this procedure is two-fold. First, the programs form a conceptual umbrella to link the output of several individual projects akin to each other and thus amplify results. Second, the administrative responsibility and authority is thus decentralized in order to achieve more efficient collective use of Institute of Human Sciences resources and talent. The five programs under which the research, educational and demonstration projects fall are: Deprivation and Social Transition; Intercultural Conflict and Cooperation; the Individual and His Adaptations in Society; Urban Change and Development; and Voluntary Participation and Leisure Activities in the Urban World. Most of the research projects are basic. Several deal with prevalence, activity, and participation of volunteer organizations. Only two formal courses have been organized thus far. A "Seminar in Urban Change and Development," for advanced students in universities in the Greater Boston area, and for general practitioners in the field of Urban Studies, and a seminar in "Urban Development Research and Policy" for Boston College graduate students. The former course deals with actual contemporary urban problems. The latter is structured for extensive

[42] *Ibid.*, pp. 130-131.

use of case records, team work in applied research, independent research, discussion and presentation in group work.[43]

If these and other specialized fields are to expand in the total graduate educational complex, several issues must be resolved. Thus far, no coherent logic has been presented comparable to the logic of history, for example, which will allow programs to be institutionalized and maintained without constant defensiveness. Much of the justification of these specialized courses is polemical, exhortative, and frequently militant. Second, the problem of job opportunities for students who have received advanced degrees in specialized studies is far from assured. Even well-established programs in American studies, producing substantial numbers of Ph.D.'s have not solved this problem. Then there is the matter alluded to time and again in reports of the lack of adequate library holdings and substantive research results which can sustain special studies. Lastly, none of the graduate programs has solved the problem of providing the broad exposures desired in the social sciences and humanities and the sophisticated research skills needed for persons to pursue scholarly careers. Schools of education have, of course, struggled with this matter for generations, and one can anticipate a long-term effort within the interdisciplinary specialized studies as well.

The sheer variety of course offerings in departments and the tentative, informal arrangements to effect synthesis of courses in common areas of concern would seem to deny or make impossible any cohesive program of changes and reforms in graduate curriculum and instruction which would be generally true in sciences, social sciences, and humanities. However, suggested or tried changes imply a potential new profile for graduate work in the arts and sciences. Obviously there will be differences among departments and among major fields of knowledge, but there seems to be a surge toward shortening graduate programs for both the master's and the doctoral degrees with somewhat more prescribed core work in doctoral programs than has been true in the past. Institutions are struggling with the nature and problems of interdisciplinary work, but so great is the interest that some variant of interdisciplinary work is likely to be found in most programs. Graduate schools somewhat reluctantly have begun to review and revise admissions practices and seem likely to be forced to extend the consideration of broader qualifications for admissions, employed first with disadvantaged students, then with graduate students generally. Especially in the social sciences and

[43] *Ibid.*, pp. 131-132.

some of the humanities, mathematics seems clearly in the ascendancy, with the necessity for providing most students specific training during the graduate years. This development is, of course, not unchallenged, but the powers of quantification seem so great that movement into graduate curricula seems inexorable. Lastly, and with quite faltering steps, graduate departments are trying to accommodate the needs of future practitioners, either by making dissertation requirements broader to conform to applied criteria or by providing some applied experience.

Chapter III

STRUCTURE AND ORGANIZATION

Departmentalism

Much of the success and much of the rigidity of graduate education in the arts and sciences derives directly from the departmental structure which characterizes American institutions of higher education. It is the department which becomes a critical mass of talent to attract outstanding scholars to an institution. It is the department which provides a focus of loyalty and identification for professors, and it is the department which has made possible many of the great advances in research. But this same department has created barriers between fields, has jeopardized institutional goals for more limited and frequently selfish departmental ends, and has established the values of a discipline as superordinant to the human values of students seeking an education which contributes to their individual development.

Departmental Structure

Although early American colleges were not departmentalized (for among other reasons there were not enough educated scholars to form a subunit within a college), roots of departmentalism extend back into the eighteenth century, when professorships were created and tutors associated with the incumbents of chairs. Dressel, quoting Josiah Quincy, noted that even the term "department" extends back as far as 1739: "Tutors at the time of the election but also to the spirit and mode in which they afterwards conducted their respective

departments. . . ."[1] During the eighteenth century, as institutions began to enlarge, the evolution of departments continued. In 1825 the University of Virginia reorganized into schools, each headed by a professor. In the 1870s Johns Hopkins opened with a faculty consisting of several different ranks; by the 1880s and 1890s, Cornell, Johns Hopkins, Harvard, Columbia, Yale, and Princeton had all created organizations very similar to a contemporary department. As in many features of graduate education, the newly created University of Chicago set the general style for departmentalism with its initial 26 departments organized into separate faculties.

> Thirteen head professors presided as virtually absolute monarchs of departments which included staff members holding twelve distinct ranks. The professor not only ran his department, he was its sole representative in the academic senate. There were no divisions or colleges, so that each department became an autonomous unit free to do anything which it could find the resources to support. By including in the table of ranks associate professors and professors with permanent appointments, as well as the head professor, the seed for rotating chairmen (the temporarily first among equals) was planted, but not until 1911 was an attempt made to improve the morale of younger faculty by reducing the power of departmental chairmen, allowing them to be elected by the department rather than to be selected by the higher echelon administrators.[2]

This Chicago model seems to have so spread during the first half of the twentieth century that even the smaller liberal arts colleges adopted the departmental mode, listing, for example, many one- and two-person departments complete with a department head.

There can be no gainsaying that academic departments have made substantial contributions to American higher education. Departments are a relatively simple way of organizing people of like mind and interests—a way which allows considerable freedom for professors to pursue individual research and teaching interests. Departments also are a logical method for creating and administering university operating budgets: the department budget is the module which combines with program planning and budgeting to become the institutional budget. As the source of faculty recruitment and as the base upon which tenure and professorial appointments have rested, the department has become an effective means of personnel management. Because of the historical accident of American universities combining the undergraduate college with a German-style

[1] Dressel, *et al.*, *The Confidence Crisis*, p. 3 (emphasis Dressel's).

[2] *Ibid.*, p. 5.

graduate university, the department has proven a reasonably effective device for combining these seemingly irreconcilable elements. This point can perhaps be best illustrated by noting the generally accepted goals or missions of departments: instructing undergraduate and graduate students, conducting basic applied research, advancing the discipline and profession nationally, advising undergraduate majors, assisting junior staff in career development, and serving business and industry. The department, thus far, has been flexible enough to allow some effort to be expended on all of these goals. A different organization would, beyond doubt, be more complicated and could be quite redundant, as was exhibited during the high point of the general education movement. At that time a number of institutions organized a separate general education faculty possessing many of the attributes of the faculties offering advanced undergraduate and graduate work.

Criticisms of Departmentalism

However, departments have exhibited considerable weakness as well—so much so that some observers believe only the abolition of departments will allow genuine reform in both undergraduate and graduate education. That general posture is implied by the statement of the graduate dean at one of the major institutions in the country:

> As for curricular requirements, they remain departmental matters and little shifts and changes occur all over the lot all the time. The graduate school itself has only two requirements: First, beginning with those entering for the first time next year, we shall require three years at the full tuition rate; and second, we require a thesis approved by two officers of instruction. Everything else, e.g., language requirements, written and oral exams, etc., are entirely up to the departments. I wish I could report any change in the nature of theses but I can't. They seem to remain as bulky and pompous as ever. As for using newer media, while we know that some kind of oral and video circuits recently have been put in at high cost, I hear only that very little use is made of them as yet educationally. Further, as for now at least, we are not examining the graduate school save as to how we can raise and save money.[3]

One of the major weaknesses of departmentalism is that departments have grown farther and farther away from institutional goals and objectives. Dressel and his associates have identified three phases of departmental development through which, they suggest, departments evolve logically as institutions increase in size and complexity. First there is the university-oriented department which tends to stress

[3]Unpublished record of interview.

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undergraduate education and to depend on general funds for support of departmental activities. These departments generally conform quite closely to university-wide priorities enforced generally through the efforts of strong and deeply entrenched deans and central administrative officers. As the institution enlarges and develops more specialization, a departmental orientation emerges which fosters a concern with research and graduate programs. While these departments seek and receive some extramural funding which can assure departmental autonomy, they are still sufficiently reliant on university support that they cannot depart too radically from university goals and objectives. However, as the evolutionary process continues, the departments establish their research characters and a disciplinary orientation emerges as a crowning glory. Dressel described the resultant pathology:

> Individualism becomes rampant as professors by virtue of their reputations and funds obtained through their own efforts develop sections and fiefdoms within their department which are virtually immune to any intervention by chairman, dean, or other administrative levels. Where the disciplinary orientation holds sway and research productivity and publication establish a ready means of transfer from one institution to the other, a department for many of the professors becomes only a convenient, perhaps necessary, but very likely a temporary attachment. Undergraduate instruction, even the service instruction to non-majors may continue to be prized in such a department as long as it is a necessary vehicle for the employment of graduate assistants, assistant instructors and teaching fellows to relieve the professors of undergraduate instruction and to assist them in research activity as well as to increase graduate school enrollment. If fellowship and research support become adequate to provide the assistance required, the faculty have no compunction about turning the teaching of undergraduates over to graduate assistants admitted on a marginal basis or even on a waiver of usual graduate admission requirements. A still further step desired by some faculty with disciplinary orientation would be the elimination of all responsibility for undergraduate education, except possibly for a few very carefully selected Honors undergraduates who are able to move into graduate education and research at an accelerated pace.[4]

A second weakness of departmentalism is that the stress placed on the individual interest of faculty members prevents any overall curricular patterns from developing for either undergraduate or graduate training. Thus it is quite conceivable for major departments to leave completely uncovered broad curricular and research areas needed for the preparation of future college teachers because these

[4]Dressel, *et al.*, *The Confidence Crisis*, p. 218.

areas do not conform to the idiosyncratic interests of any member of the department. Once departments have emerged beyond the university-oriented level, they are able to exert continuing control over faculty positions and funds to such an extent that such imbalances can be perpetuated, with the university administration powerless to rectify conditions. When departments in essence control appointive and funding powers, with no effective mode available for university monitoring, distortions in staffing policy can develop quickly. From the standpoint of university-wide priorities conscious of essential education missions, faculties in the social and behavioral sciences, for example, ought to reflect a balance between behavioristic and more descriptive or normative approaches to subjects. Instead, once a particular point of view comes to dominate a department, virtual exclusion of conflicting ways of viewing reality is likely to happen. Academic traditions are such that, expecially in departmentally- or disciplinary-oriented departments, the central administration of the university seems almost afraid to contradict a departmental judgment as to what is and what is not appropriate scholarship in the field. It is this evolution of departments to a position which is beyond monitoring and control that has led to some of the more serious abuses. Some highly research-oriented departments will not only refuse to offer service courses but indeed refuse to produce master's or even Ph.D. recipients. In other departments the preoccupation with disciplinary evolution is so great that the educational needs of undergraduate and graduate students are scarcely considered. Well-established departments having a high proportion of professors on permanent tenure can and frequently do refuse to make adjustments and compromises needed to assist institutions to respond to new conditions. To illustrate, at one land-grant institution the needs of a rapidly industralizing economy required people trained in computer science with both sound theoretical grounding and experience with equipment. Neither the mathematically-oriented department of computer science in the college of arts and sciences nor the department of computer technology in the college of engineering would cooperate in developing a joint doctoral program, and the central administration, although recognizing the educational need, was unwilling to force the issue.

The most recent and the most comprehensive study of departments in American higher education reached this conclusion:

> The universities and the departments within them are out of control. Administrators and faculties too readily interpret their own aspira-

> tions as meeting or transcending the educational needs of the clientele which they serve. In seeking support to fulfill these aspirations, they engage in half-truths and reluctantly acquiesce to requests for data which are so selected, manipulated and presented as to support their case. . . . Departments and other units within the university must be brought under control so that their resources are allocated and used in accord with priorities set for the university by the university in cooperation with those who support it.[5]

Alternatives and Signs of Change

Assuming the correctness of Dressel's charge, one can then search for trends or developments indicative of change and reform, or the lack thereof. The first strong impression which arises from examining university catalogs and from visiting strong graduate-oriented universities is that departmentalism still prevails and that departments have sufficient power to resist demands for change. The preponderant comment from graduate deans queried as to what changes were taking place in graduate education in the arts and sciences was that since departments were for the most part autonomous, any changes would have to originate in departments, but that generally those units did not appear particularly eager to undertake change. However, there does seem to be some ferment which might ultimately produce a different structure for higher education in the United States. Dressel and his associates saw several new developments essential for reform. First, they urged the imposition of a rigorous management system which would make all subordinate units responsible and accountable for the expenditure of resources for specified and approved missions. Then they urged that a greater variety of organizational structures be encouraged with reasonably well-defined and appropriately differentiated missions. Thus there should be separate organizations interested in the applied and service activities, such as centers for continuing education and cooperative extension programs. Because the educational needs of undergraduate students are unique, universities may need to introduce a number of undergraduate colleges with nondepartmental organization and separate facilities. This would leave the discipline-oriented department free to concentrate in the two related areas for which it is best suited—graduate study and pure research. In a sense, Dressel and his associates restated in contemporary idiom the goals sought by William Rainey Harper at Chicago and David Starr Jordan at Stanford. Having envisioned the university's mission as the produc-

[5] *Ibid.*, p. 232.

tion of research and the training of research-oriented scholars, they sought to create feeder institutions which would assume responsibility for undergraduate education. Historical, sociological, and economic forces made those dreams unattainable. Whether conditions have changed sufficiently to make that particular model viable is somewhat conjectural.

The organization of the University of Wisconsin at Green Bay presents a model which, although untested with respect to graduate education, may suggest the possible direction of change. That institution, given the mission of becoming a distinctive university, has focused its entire educational service and research emphasis on the environment. The basic academic units are four environmental colleges, each of which is highly interdisciplinary with respect to faculty appointments. These four colleges offer 17 interdisciplinary programs which are called "concentrations." Each concentration is the responsibility of a chairman and an interdisciplinary faculty whose appointive and budgetary support reside in the concentration rather than in a department. The need for some disciplinary course work and research is met through units called "options." These options are essentially departments, but without the perquisites and prerogatives which have made for departmental autonomy. They must seek permission from the concentrations to offer disciplinary courses. They must recruit faculty through the concentrations, thus satisfying interdisciplinary needs as well as departmental needs. And they must receive all budgetary support, whether for equipment, travel or teaching assistance, through the interdisciplinary units. The institution in its present form is four years old and has awarded thus far only bachelor's degrees. However, during the academic year 1971-72, the planning is proceeding for graduate work in the expectation that graduate programs at the master's level will follow almost exactly the format characteristic of the undergraduate program. Thus master's degrees will be generally interdisciplinary in character, will focus on problems rather than disciplinary concerns, and will be somewhat action- or service-oriented. The chancellor and some of his chief assistants believe that the model is ultimately adaptable at the doctoral level.

Another attempt to solve the problem of departments is the University of California—Santa Cruz. That institution has the mission of becoming a comprehensive university (of approximately 20,000 students) stressing both undergraduate education and graduate education and research. The device used is the creation of cluster colleges (of 700 to 1,000 students each) responsible for undergraduate education. Each of these colleges has developed a somewhat

unique theme or emphasis. Their faculties, appropriately trained, are appointed as fellows in the colleges for half of their time, with the colleges providing half of their support. In addition is the orthodox array of departments, largely responsible for the graduate program and specialized research. Faculty members also are appointed to these departments and receive half of their support from them. The evidence thus far is that, under the able and dedicated leadership of the first chancellor, the reconciliation of the seemingly irreconcilable seems to have taken place with a minimum of difficultv. The likelihood for success also may be related to the fact that this was a completely new institution with a physical plant specifically designed to accommodate the two separate functions. Each college has its own cluster of buildings which provide congenial locations for faculty offices and laboratories, thus cementing faculty loyalties which otherwise might have been concentrated in an isolated department.

Institutes and Centers

By far the most widespread and pervasive attempt to modify departmental structure is the creation of centers or institutes. While complete evidence is unavailable, as many as 5,000 institutes may be operating in major universities. These seemingly have come into existence in response to several forces: the inability of the academic department to adapt to new functional demands, new sources of financial support, new constituencies, different faculty aspirations and role expectations, increased urging from external sponsors, and rising individual and institutional needs for status and prestige. Although some centers or institutes did exist prior to World War II, the greatest expansion—to between six and twenty institutes per university—has come about during the 1950s and 1960s. These centers or institutes embody many areas of human concern: labor and industrial relations, ethnic research, ethno-musicology, pacification, linguistics, community development, environmental health, medieval Spanish, and psychopharmacology. However, approximately two-thirds fall into the basic and applied sciences category. The remainder are spread over the social sciences, business, government, education and related areas. While many of the earlier institutes located within schools or colleges, a majority of the more recently created institutes are administered from an all-university structure.[6]

[6]This resume is based on Stanley O. Ikenberry, *A Profile of Proliferating Institutes* (University Park: Center for the Study of Higher Education, 1970).

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The variety of missions and concerns of centers or institutes may be illustrated from experiences at Pennsylvania State University, which maintains 38 separate entities:

1. *Administration and coordination of research.* The primary functions of the centers in this category are to request, approve, fund or seek funds for various research projects submitted to them by faculty members who are not on the permanent staff of the center. These centers may also have some responsibility for the supervision of funded projects and may also publish research results. The Center for Research established by the College of Business is an excellent example of a unit primarily engaged in the administration and coordination of research. This institute is the result of an attempt on the part of the College of Business to centralize its research activity. Although the director of this unit and his staff engage in research activities of their own, their main functions are to: (1) aid individual faculty members in securing support for their research projects; (2) screen and give advice on specific research proposals; (3) provide centralized technical and clerical support for research projects; and (4) generally give visibility to the research function of the college.

2. *Conduct of research.* In contrast to this unit, one of numerous examples of a Center primarily engaged in the conduct of research is the Laboratory for Human Performance Research. Established to conduct research in the specific area of human performance, this unit has a permanent staff of professionals along with extensive facilities. The Center staff decides on what project to undertake and research results are published by the Center.

3. *Public Service.* A good example of an institute engaged primarily in the public service function is the Institute of Public Safety. This institute provides educational services to Pennsylvania citizens in schools for traffic police, to instruct in bus transportation, . . . conference and research activities in the broad field of traffic safety fleet supervision, and management training and control of drivers. Indeed, this Center conducts programs throughout the nation and Canada, and thus provides a great public service in the whole transportation safety area.

4. *Education and Training.* Although it is difficult to choose a Center in a sample that is primarily engaged in education and training, the radioastronomy observatory comes the closest to this type of Center. Although research is conducted by this unit, its chief goal or mission is the education and training of graduate students. In fact, it is difficult to make a clear-cut distinction between the functions of this unit and the functions of the Astronomy Department.

5. *Supporting Services to Colleges and Departments.* Finally, a very good example of a Center that provides services to colleges and

departments is the Computation Center. Indeed, the sole function of this unit is to provide services to the total university community.[7]

While a number of centers perform functions different from those of an academic department, in a very real sense most have come into existence as substitutes for academic departments. Dressel and his collaborators remarked:

> Yet the institute proliferates in great part because of the fallibility of traditional academic departments whose instructional and research activities are tied tightly to the disciplines which justify their existence. Academic departments typically have neither the resources nor the interest to attack problems transcending their disciplines. Faculty members are uncomfortable when asked to operate outside the theoretical constructs with which they are most familiar. Thus, when funds become available in problem areas not previously established as being of university concern, often the university is plotted into new concerns. The institute provides a natural vehicle for assembling staff, attracting more funds, indicating institutional commitment and determinimg responsibility and accountability of resources.[8]

However, the creation of centers and institutes is still far from a perfect solution for problems of departmentalism. First there is the matter of funding. Centers and institutes have frequently come into existence supported by extramural financing committed for a relatively short period of time. As long as an institute is reliant exclusively on outside financing, retaining senior faculty and their loyalties is somewhat precarious. If the center makes use of full-time professional people, there is the difficulty of providing them tenure and other faculty perquisites. If the center uses more professors who spend part of their time in the center and part in a department, the problem of departmental loyalties intrudes. On the other hand, as centers and institutes become securely lodged and obtain guaranteed institutional support as well as the prerogative of appointing tenured faculty, the institute begins to take on many of the characteristics of a department and manifests many of its inflexibilities. The dynamics of some of these problems are captured by Dressel and his associates who stumbled onto the rising significance of institutes in their comprehensive study of academic departments.

> The character and problems of institute staffing are closely related to its budgetary sources. A director of a Latin-American Studies Institute who co-ordinates for several departments a doctoral program using staff and courses from these departments may actually have no

[7]Mary M. Norman, *Centers and Institutes at the Pennsylvania State University* (University Park: Center for the Study of Higher Education, 1971), pp. 15-18.

[8]Paul L. Dressel, *et al.*, "The Proliferating Institutes," *Change*, July-August, 1969, p. 23.

staff or budget of his own. He may be privileged by the goodwill of the chairman and/or the dean to have a say in new appointments, tenure, curriculum development and degree requirements. His influence on the curriculum and degree requirements is enhanced by his influence with those faculty members in the several departments who teach courses designated as part of the Latin-American Studies program. If the Director is a scholar of some repute and the initiator of the program, he may have extensive influence. If he is an untenured faculty member, he will be fortunate if his own department reduces his teaching load by one course and the dean provides him with a part-time secretary. Nevertheless, the title, the sign on the door and the privilege usually accorded of sitting with the chairman at meetings called by the dean, offer some recognition which an enterprising operator can, by grants or politics, promote to something more impressive in a few years.

However, seldom does the institute director achieve significant stature and power until he gets a budget and a staff of his own. The easiest and quickest route is to obtain funds from external sources. The director who accomplishes this can then appoint staff members, secretaries and graduate assistants whose jobs emanate from him and whose loyalties are, therefore, clearly to him. If funds are sufficient to import some scholars whose stature commands departmental recognition, courses can be developed, even though offered through departments; graduate students can write dissertations under institute direction; and, ultimately, the institute may achieve departmental, school, or college academic prerogatives. And surely the instructional contribution deserves a permanent lien on the general fund budget.[9]

Degrees and Their Significance

The concept of academic degrees originated in medieval universities and is validated for contemporary use through the responsibility of institutions of higher education to certify people who have demonstrated a specified level of competence in some academic, technical, or professional field. However, the excessive number of named degrees in the United States calls for some substantial indication of their precise meaning. But the movement toward consensus within the academic community as to how numbers should be limited and meaning specified is tediously slow; any discussion of nomenclature leads straight to some of the most perplexing substantive issues facing graduate education. Chief among these is the fact that the Ph.D. degree has become regarded as the proper credential for college teaching, yet the degree itself symbolizes no particular preparation for teaching but rather preparation for independent

[9]Dressel, *et al.*, *The Confidence Crisis*, pp. 124-125.

research in a relatively narrow field of learning. Indeed, some contend that preparation for a doctoral degree in some fields is almost antithetical to the demands of effective undergraduate collegiate instruction. (Mathematics may be a case in point.) Resolution of this issue could be attempted in one of several different ways, none of which is generally accepted. One argument is to retain the Ph.D. degree as the principal doctoral certificate but to create within that degree structure several tracks to accommodate student career goals of undergraduate teaching, research, or working in business or industry. Another approach is to reject any substantial modification of the nature of Ph.D. training and at the same time to create new titles for those who need a doctoral degree but not necessarily a research-oriented one. A third approach argues essentially for a devaluation of the Ph.D. so that it is more generally available to larger numbers of graduate students and is somewhat more flexibly structured. For the limited number of individuals who have the talent and interests to devote themselves to original scholarship, devaluation of the Ph.D. would mean the creation of a new superdoctoral degree granted at the end of some stipulated time of postdoctoral study.

A second issue is the fact that master's degrees have assimilated such a variety of meanings. Dean Peter Elder of Harvard University perhaps epitomized this situation most aptly when he suggested that the master's was a bit like a streetwalker, one for every taste and every pocketbook. This uncertainty as to the significance of master's degrees has a long and uneven history: at times the master's degree has signified specified amounts of academic work; at other times, simply an honorific recognition that a person, having earned a bachelor's degree, had spent a reasonable amount of time in reasonably mature and productive adult work. Occasionally in some institutions the master's degree implied some training in research considerably beyond what would be attempted as an undergraduate student, while at other times and places the degree signified nothing more than a year or so continuation of essentially undergraduate academic activities. Adding to the confusion is the fact that master's degrees in certain professional fields signify professional capability (e.g., education, business, social work), while master's degrees in many of the arts and sciences certify to no particular professional or vocational competence. In a similar vein, master's degrees in arts and sciences and in some of the professional fields merely certify to a year of work beyond the bachelor's degree, whereas in others (e.g., medicine, dentistry, and law) a master's degree may be more advanced certification than the doctorate itself and indicative of very definite research training.

The third critical issue is that the articulation between various levels of degrees is rarely explicit. This produces considerable uncertainty about the implications of any given degree as a preparation for future academic work or as an appropriate terminal certification. Thus the Associate of Arts degree granted by junior colleges may or may not indicate capacity to enter into a baccalaureate program. Because the bachelor's degree is so frequently of a general education or liberal education sort, it is not particularly predictive as to whether students should or should not enter into a master's program. Uncertainties become even greater with respect to the meaning of the master's degree for subsequent graduate work. At various times in different institutions the master's degree becomes a consolation prize for students judged incapable of pursuing a doctoral program, a terminal degree appropriate for the credentialling of secondary school teachers, or a definite and generally accepted step on the way to receiving a Ph.D. Most of the recommended or attempted reforms of the American degree structure are intended to resolve these three issues.

The Master's Degree

The master's degree, which in early medieval universities was the appropriate preparation for university teaching, has undergone more vicissitudes than have either the bachelor's or the doctor's degrees. With each fluctuation of its meaning, associations and organizations have studied the matter and made specific recommendations. Thus in the 1930s the American Association of University Professors and the Association of American Universities urged the standardization of the master's degree with respect to length and content. A decade later, the Association of American Universities attempted to differentiate between the Master of Arts and the Master of Science and to set up criteria to guide program development and admissions of students to each of the two degrees. Another decade later (1957-1958) the Association of Graduate Schools was urging that the master's degree be revitalized and oriented toward secondary school teaching, and in 1959 Dean Peter Elder urged that master's programs be entities in themselves designed *de novo* to achieve quite discrete educational objectives. He believed that universities either should improve their weak, easy, or consolatory master's programs or should stop awarding degrees of that sort. In 1963 the Council of Graduate Schools attempted standardization by arguing for several different but interrelated functions of a master's degree: (1) an introduction to graduate study; (2) a remedial period to cover deficiencies in undergraduate education; and (3) a terminal professional program.

Again, in 1966, the Council of Graduate Schools urged reform and argued for (1) development of a reasonably strong faculty before the school should award the master's degree and (2) a coherent sequential program of lectures, seminars, discussions, and independent studies or investigations designed to help the student acquire an introduction to the mastery of knowledge, to creative scholarship, and to research in his field. Especially vocal concerning the master's degree was Oliver C. Carmichael, who sought to create a master's degree which would serve as a qualification for college teaching in junior colleges or the first two years of four-year colleges. According to Carmichael's scheme, students would progress through an articulated three-year program (the junior and senior years of the baccalaureate degree plus one more year) to attain the title "Master of Philosophy" and the preparation for undergraduate college teaching. Despite these and other efforts at reform, the master's degree in 1972 is remarkably similar to what it was at the turn of the century. It is still a recognition of at least one year's work past the baccalaureate, but it reveals very little concerning the program elected, the nature of courses, or even the performance of students.

After reviewing in detail this fluctuating history, Spurr has presented a series of plausible and rational recommendations—but without being overly sanguine that they will be accepted any more than were earlier recommendations.[10] He feels that the fatal flaw in present usage is that the master's degree may be bypassed on the route to the doctorate; hence it becomes regarded as a second-class degree or a consolation prize. If it could be regarded as the first graduate degree and signify a definitely higher stage of accomplishment than the baccalaureate, it could become highly respectable. For this to happen, however, the degree must be required of all graduate students. Properly conceived, taking a master's degree en route to the doctorate should not retard the progress of the doctoral candidate and could at the same time be of significance to students who do not move on to doctoral level study. Thus Spurr urges that all students entering graduate school be admitted solely as candidates for the master's degree. They could be admitted into doctoral work only after successful completion of the master's degree. As a corroborating recommendation, a year—certainly not more than eighteen months—would be the time limit to complete the master's program. With all students completing the first effort of graduate work and receiving a master's, each could then make the decision whether to

[10]Stephen H. Spurr, *Academic Degree Structures, Innovative Approaches* (New York: McGraw-Hill Book Company, 1970).

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terminate academic training at that point, to move into a professional doctoral program, or to continue with a doctoral program in the liberal arts and sciences.

Others, however, are even less sanguine than Spurr that the Master of Arts or Master of Science can be so refurbished. Among these are a majority of the Yale University faculty, who voted to eliminate the master's degrees except in certain very definite terminal professional programs. The master's degree in arts or sciences was replaced with the Master of Philosophy, ostensibly to raise the standards required for the master's degree which had lost distinct meaning at Yale as it had in the nation at large. The primary purpose of the change, however, was to provide a new intermediate degree which represented mastery of a discipline in the full scope and depth required for the Ph.D., except for the demonstrated ability to organize and complete a major research project in a discipline or subfield of a discipline. The competence anticipated for the Master of Philosophy would be adequate foundation for careers in teaching and in other fields not requiring a highly developed research competency. The Master of Philosophy thus was Yale's answer to the endemic criticism of the inadequacies of Ph.D. programs for the preparation of college teachers. Yale preferred the creation of this intermediate degree to the option of modifying the existing Ph.D. requirements on the ground that serious modification would lead almost inexorably to a debasing of the Ph.D. degree. Recognizing that the creation of the Master of Philosophy itself would not be insurance that the degree would not follow in the footsteps of the Master of Arts or Master of Science, the Yale faculty also adopted a policy that recipients of the Master of Philosophy degree would have first option for entrance into Ph.D. programs at Yale and first call on available fellowship or scholarship funds. The aspirations of the Yale faculty were well summarized by the graduate dean, who argued:

> Academic innovation is not easy and the prestige of the Ph.D. as a union card for college teaching is high; but it is my hope that other universities will join Yale in offering this new degree, since I believe it is an appropriate answer to a clear and growing need. I also hope that many institutions will offer holders of this degree teaching positions, especially for teaching in the first two years of college, that may lead eventually to tenure. Our major universities and colleges will properly continue to insist upon persons who have completed the Ph.D. or its equivalent. For many and perhaps most of their teaching positions, experience in research, i.e., experience in the verification of old knowledge and the search for new, is a necessary although not a sufficient condition for imaginative and effective teaching in many courses at all levels and especially at the

> advanced undergraduate level. But there are many positions, especially those concerned with general education in the first two years of college which can be filled by persons who combine the achievement represented by this new degree with commitment to and skill in the art of teaching [11]

Even though an auspicious start was made for an intermediate degree at Yale, a footnote to the story should be added. In a July 3, 1971, letter from the present dean of the graduate school at Yale University is this paragraph:

> You may be amused to know that within the past year eight departments have voted to recommend that we re-establish the M.A. and M.S. Indeed, the Executive Committee has agreed that in October a meeting of the full Faculty will be called to discuss this issue at length, the Executive Committee being in disagreement about this possibility

Other institutions have attempted several other intermediate degrees. In 1967 Rutgers University adopted a Master of Philosophy as an intermediate degree in 27 out of 53 departments which offer the doctorate. It signifies that the student has completed his graduate studies and has demonstrated a comprehensive mastery of his general field of concentration. Receipt of the Master of Philosophy makes the recipient automatically eligible to proceed with the doctoral program within the four years following the receipt of the degree. At the University of Kansas the Master of Philosophy is offered in several fields and at the University of Southern Mississippi the Master of Philosophy degree is designed to prepare junior college teachers in a number of subjects. Several institutions in the Western Intercollegiate Conference (the Big Ten) have adopted certificates or the phrase "Candidate in _____." The University of California also has adopted the phrasing "Candidate in Philosophy" as the most acceptable, and Spurr believes that "Candidate in Philosophy" is the most widely adopted designation for the successful completion of the general studies stage of the doctorate.[12]

The Doctor of Arts

Simultaneously with experimentation and discussion of intermediate degrees such as the Master of Philosophy has come broad investigation of a substitute doctorate intended to prepare college teachers who have no particular need for the heavy research emphasis of the Ph.D. It is difficult to discover the origin of recent

[11]John Perry Miller, "The Master of Philosophy: A New Degree Is Born," *Under the Tower* (New Haven: Yale University, 1968), p. 3.

[12]Spurr, p. 93.

consideration of the Doctor of Arts degree, which is the most frequently suggested alternative, but certainly the Doctor of Arts program at Carnegie-Mellon University was one of the earliest attempts and is still the most frequently cited experiment. The present rationale for such a degree has been cogently elaborated by the Carnegie Commission on Higher Education. It observes that although the Ph.D. is a highly respected degree, useful for advanced research and for the training of future research workers, it is not particularly useful for persons who teach and generally do no research. Even more serious is the fact that a Ph.D. program may enforce such a narrow training that adequate preparation for undergraduate teaching may be precluded. The commission favors a Doctor of Arts degree which would require four years of study beyond the bachelor's (in theory the same as the Ph.D.), but in place of a dissertation students would be asked to do within a chosen field an independent piece of work which was not necessarily an original contribution to knowledge. Curriculum would involve a broader base of subjects and an explicit opportunity to study and practice methods of teaching. As envisioned, the Doctor of Arts would not be just an attenuated Ph.D. program but rather a specifically designed program stressing elements essential to the task of teaching. The commission seems persuaded that reformation of the Ph.D. would not be a particularly happy solution to the problem of better preparation for college teachers. The Ph.D. has been a most useful degree, and it should be continued for those who will undertake original research and train others to do so. The new degree, adequately organized through the efforts not of one department but of the entire university and given adequate respectability by the major graduate schools, should take a respected place alongside of the Ph.D.

Perhaps the most vigorous exponent of the Doctor of Arts degree is E. Alden Dunham,[13] who used his analysis of state colleges as a springboard for his radical proposal for reform. He felt that the predicted oversupply of Ph.D.'s in the 1970s would provide a reason for channeling large numbers of aspiring graduate students toward degrees more relevant to teaching than to research. In view of the faculty needs of two- and four-year institutions, which would be educating 50 percent or more of all students in higher education, there would be employment opportunities for people appropriately prepared. Since the major producers of Ph.D.'s would not likely change their efforts substantially, Dunham believed that the state colleges and regional universities could very well take the lead in

[13] E. Alden Dunham, *Colleges of the Forgotten Americans* (New York: McGraw-Hill Book Co., 1970).

developing these new programs. Dunham is not at all persuaded that an intermediate degree or a revitalized master's degree could ever be very effective as an alternate, nor does he see the possibility for reform of the Ph.D. Thus he argues that "there should be a new and different doctoral program and degree for the preparation of college teachers in the Arts and Sciences." To prevent the almost immediate downward drift in status which is one of the prevailing criticisms of the Doctor of Arts degree, he urges:

> that no institution should mount a program unless it is fully committed to it. Aside from the provision of sufficient resources, the specific test of commitment is the willingness of the institution not only to hire graduates of its own program but to promote them and give them tenure as well.

As an additional safeguard he posits that where full-blown Ph.D. programs exist, the institution might very well refrain from attempting a parallel Doctor of Arts program. The program as envisioned:

> represents a maximum of three years of solid graduate work. It is a degree awarded by the faculty of arts and sciences, not by the faculty of education. Heavy involvement by arts and sciences people is essential, not just for prestige but because at least 75 percent of the program is in academic areas. While there is heavy emphasis on scholarship, the thrust of work is applied scholarship, and the dissertation relates to curriculum and instruction at the college level. There is in-depth study of a discipline but also interdisciplinary and problem-centered approaches to general education for which at present it is almost impossible to find enthusiastic faculty. As at Carnegie-Mellon University, the educational component of the program, about 25 percent, might consist of a course in learning theory, methodology, cognition, dissertation seminar, and internship, whether in a two- or four-year college. Future faculty members should know something about teaching the students they will teach, and the history and problems of higher education. A final and important point: the doctor of arts is a terminal degree; it is not a consolation prize for losers en route to the Ph.D., nor is it a beginning step for people aiming at the Ph.D.[14]

A variant of the concept of the Doctor of Arts degree is the Diplomate in College Teaching awarded by the University of Miami. This is a program specifically designed to prepare junior college teachers and is a two-year program beyond the bachelor's degree. The first year consists of intensive study in one field equivalent to the level required for a Master of Arts degree. The second calendar year consists of approximately three equal parts. Two-thirds is distributed

[14] *Ibid.*, p. 161.

between two relevant cognate fields; the remaining third is devoted to formal study of teaching and the problems of education and a carefully supervised internship. The program, which in 1971 is in its third year, has recruited students primarily from teaching posts in southern Florida junior colleges. With fellowship assistance, these students spend an intensive year beyond the master's in this broadening sort of program. Substantively, the students feel the program is well contrived and helpful to them in their roles as junior college teachers. However the title of the degree is somewhat confusing, and a number of the junior colleges have been unwilling to grant salary increments based on the possession of the Diplomate in College Teaching. Thus there is serious discussion at the University of Miami regarding the possibility of converting the diplomate into a Doctor of Arts program and using Dunham's criteria for program development. The University of Miami may be a natural place for the flowering of a Doctor of Arts program. Possessing the essentials, its diplomate program could be adjusted and expanded somewhat to become the basis of the Doctor of Arts program. No other Florida institution offers or plans to offer the Doctor of Arts degree, hence there would be no regional competition. Miami University itself is not heavily involved in Ph.D. work and is not likely to become so for a variety of reasons, especially financial ones. In addition, the rapid expansion of the branches of Miami-Dade Junior College provides a rich source of potential graduate students for the Doctor of Arts program as well as a market to absorb the products for at least a decade and a half in the future. There is one minor flaw, which is that some of the sources for extramural funding which have supported the Diplomate in College Teaching seem more entranced with the unusual title than with supporting another Doctor of Arts program.

It is difficult to judge the likely prognosis of the Doctor of Arts degree. The major associations concerned with graduate education have endorsed the idea, and candidates are eligible for various sorts of fellowship support. The Carnegie Commission on Higher Education has clearly espoused the concept, and the Carnegie Corporation has provided substantial funds for institutions to experiment with the new program. However the haunting fear remains that the combination of high prestige generally accorded the Ph.D., together with a very real and expanding oversupply of Ph.D. recipients, will preclude any real competition from the Doctor of Arts degree. Here an analogy may be instructive. The earlier-cited Doctor of Social Science at Syracuse University appeared to be a well-contrived program producing people generally in demand as college teachers. However,

when recipients of the Doctor of Social Science Degree were given the opportunity to exchange their degrees for the Ph.D., something on the order of 90 percent jumped at the opportunity. Similarly, the history of the Doctor of Education can be instructive. The Doctor of Education degree was originally intended to be a practitioner's certificate and theoretically was conceived of as equal in rigor but different in substance from the Ph.D. degree. Generally, one of two developments has transpired: either the Doctor of Education has been consistently regarded as a second-class degree with less rigorous requirements—for example, no language requirements—or the demands have been so modified that there is no perceptible difference between the Ed.D. and the Ph.D. degrees. When schools of education have reached that point the question obviously arises, if there is no difference, why not concentrate on the more prestigious degree? Although the need for better preparation of college teachers persists, careful assessment of the Doctor of Arts degree suggests that it will not emerge as the major facilitating device.

Although prognosis for the resolution of any of the issues is difficult to gauge, a general direction of resolution can be inferred from actual examples and from a set of principles elaborated by Spurr.

> First, the number of different degree titles should be kept as low as possible, allowing for substantial variation within each as regards subject matter, emphasis, quantity and even quality of effort.
>
> Second, degree structure should be flexible in time required for the completion of the academic program in order to encourage acceleration, but should have rather specific over-all time limits in order to discourage too attenuated an effort.
>
> Third, each degree should mark the successful completion of one stage of academic progress, without implication or prejudgment as to a student's capacity to embark on following stages.
>
> Fourth, degree structure should be so interrelated that the maximum opportunity exists for redirection as the student's motivation, interest and intellectual achievements permit.
>
> Fifth, the various components of the educational experience are not optimally separable into different time periods. While there is general acceptance that the student trained both in the liberal arts and in a specific field of concentration, or in a specific profession is more desirably educated than either the pure generalist or the pure specialist, it is by no means clear that one phase of education should be separated in time from the other or, if so, which should precede which. To be specific, it is not desirable to confine general liberal

arts education to the first two years and subject matter specialization to the last years of undergraduate study.[15]

Postdoctoral Study

Recently there has been a significant but little noticed development of a variant of graduate work—postdoctoral study. As is true of so much of graduate education, the origins of postdoctoral work are found in the early years of Johns Hopkins when Daniel Coit Gilman offered 20 fellowships annually to attract young men starting research careers. Recipients, either candidates for the Ph.D. or those who already possessed it, were those who wanted more research experience. Another strand was the development of medical postdoctoral internships, with the landmark example taking place in Minnesota. The University of Minnesota had signed an agreement with the Mayo Foundation in Rochester to bring in students to work for degrees in clinics and laboratories of either institution. By 1934 a total of 1,098 students had spent an average of four years on fellowship appointments at Rochester as postdoctoral medical students, seven hundred or so of whom later became professors in medical schools. While many universities refrained from following the University of Minnesota model (quite possibly because of the lack of such a resource as the Mayo Foundation), the development of residencies and fellowships for medical doctors in a very real sense established the pattern for what was to eventually become a hidden but large-sized student enrollment. Over the decades, the expansion of postdoctoral study was fostered by a number of agencies and organizations. Senator and Mrs. Simon Guggenheim, who created a fellowship program, provided one of the important rationales for postdoctoral study:

> It has been my observation that just about the time a young man has finished college and is prepared to do valuable research, he is compelled to spend his whole time in teaching. Salaries are small so he is compelled to do this in order to live; and often he loses the impulse for creative work in his subject which should be preserved in order to make his teaching of the utmost value, and also for the sake of the value of the research in the carrying on of civilization. I have been informed that the Sabbatical year is often not taken advantage of because professors can not go abroad on half-salary; and for this reason we have provided that members of teaching staffs on Sabbatical leave shall be eligible for these appointments.[16]

[15]Spurr, pp. 26 and 27.

[16]Senator Simon Guggenheim, announcement of the John Simon Guggenheim Memorial Foundation fellowship program, 1925.

The model that justified the Guggenheim Foundation's position was quickly followed by the newly created social science Research Council, and then in turn by the American Council of Learned Societies and the Association of American Universities. Particularly after World War II, a galaxy of federal agencies established postdoctoral fellowships—the National Cancer Institute; the National Institutes of Health; and the National Science Foundation, out of which grew the Division of Medical Research.

But while these massive developments were taking place postdoctoral work was little understood, partly because of problems of definition. In some respects, the young instructor or assistant professor on a term appointment functioned in the same way as the postdoctoral fellow. Similarly, it was difficult to distinguish between a postdoctoral student and a nontenured research associate with the university. In an effort to define the role of postdoctoral students, the National Academy of Sciences Study of Postdoctoral Education in the United States drew up a list of exclusions and inclusions for categories of postdoctoral students.

Exclusions

1. Although appointments to instructor and assistant professor are temporary, they are excluded because they are understood to be part of the regular series of academic appointments and lead, if all goes well, to a permanent position.

2. Visiting professor appointments are excluded if they fill regular places on the host institution's academic staff.

3. Service research appointments which are not intended to provide an opportunity for continued education in research are excluded.

4. Internships and residencies are excluded because research training under supervision of a senior mentor is the prime purpose of the appointment.

5. Holders of Doctor's degrees who are studying for another doctorate that does not involve research as a primary activity are excluded.

Inclusions

1. Postdoctoral appointments, supported by whatever funds, that provide an opportunity for continued education and experience in research are included.

2. Scholars on leave from other institutions are included if they come primarily to further their research experience.

3. Appointments of holders of professional doctoral degrees who are pursuing research experience are included, even though they may be candidates for a second doctoral degree.

4. Appointments in government and industrial laboratories that resemble in their character and objectives postdoctoral appointments are in universities are included.

5. Persons holding fractional postdoctoral appointments are included. For example a postdoctoral Fellow with a part-time assistant professorship is included.

6. Appointments for a short duration if they are of sufficient duration to provide an opportunity for research and a formal appointment can be made.[17]

Using the definition inferred from these inclusions and exclusions, the National Academy of Sciences through a questionnaire study arrived at some of the dimensions of postdoctoral study in the United States They have estimated that in the spring of 1967 there were approximately 16,000 postdoctorals, including both citizens of the United States and of foreign nations. The vast majority concentrated in engineering, mathematics, physics, and the biological sciences, including medicine. The institutions where they studied were usually members of the Association of American Universities. In fact, approximately one-fifth of all doctoral-degree-granting institutions conduct approximately 70 percent of all postdoctoral work.

The reasons people undertake postdoctoral study and the reasons institutions engage in such work are varied. For the most part, the Ph.D. taking on postdoctoral study aspires to a lifetime career of research and teaching in some field in which he is not yet prepared to become a professor, especially if his doctoral research was a portion of a larger team effort. Some Ph.D.'s feel that the transition from graduate student to professor is too abrupt and that the three-pronged responsibilities of being a professor (teaching, research, and service) should be taken on gradually. Quite a few realistically consider status. To achieve stature in the eyes of their students, some would like to have their first research paper published before beginning to teach. Others feel that the prestige of a university in which they do postdoctoral work will enhance their chances for desirable employment; and some recent doctoral students are convinced that "the establishment" requires that they have postdoctoral experience if they are to land desirable posts in recognized institutions. Doctoral students from relatively small universities also want to experience the academic world at a larger institution and to see how research is conducted at developed institutions, for it is at that sort of university that younger Ph.D.'s aspire to serve.

[17]National Academy of Sciences, *The Invisible University* (Washington: National Academy of Sciences, 1969), p. 45.

Departments and institutions also reflect a variety of reasons for conducting postdoctoral study. In some it is strictly an accidental concomitant of having an outstanding faculty which attracts postdoctoral students. Then postdoctoral students represent an important resource by which to staff contract research projects. Especially in institutions where students move directly from doctoral student capacity to a postdoctoral capacity, a postdoctoral fellowship represents a way of maintaining continuity of work in ongoing research projects. While postdoctoral study is basically research-oriented, these advanced students also make an important contribution to the teaching staff and will frequently be asked to handle intermediate level or even advanded courses as part of their overall postgraduate experience. While there is considerable variance with respect to how long students remain in this postgraduate capacity (a relatively few seem to remain permanent postdoctoral students), generally the experience extends from six or eight months to two years. There seems to be a general feeling among professors who have directed postgraduate study that a year seems optimum and that to extend postgraduate work for a second year yields diminishing returns.

Postdoctoral study has become visible only recently, hence there is little information upon which to generalize. The summary of the National Academy of Sciences' study suggests, however, some emerging trends:

> Postdoctoral education is a useful and basically healthy development both immediately following the doctorate and later for more senior investigators. Its major purpose at the early stage is to accelerate the development of an independent investigator capable of training others in research. At the latter stage it serves as a means for concentrated pursuit of research and scholarship goals and of renewal for those whose regular responsibilities do not permit them to pursue these goals.
>
> All those connected with postdoctoral education are urged to conceive of the postdoctoral appointee as one who is in the process of development and not primarily a means to accomplish other ends. For the agencies and foundations this means recognition that the educational goals of the university may be served explicitly, given research support. For the university this means that the postdoctoral is an important component of the educational scene. For the faculty member this means that the postdoctoral should be given every opportunity and encouragement to develop his potential as an independent investigators.
>
> Most but not all postdoctorals participate in teaching and many desire more opportunities to teach. Some postdoctorals are involved

in research administration. Almost all postdoctorals spend no more than two years on the appointment. Some appointments are as short as one year, and if these postdoctorals find more than two years to be of benefit, because of the individual nature of personal development, we believe that the participation of the postdoctoral student in administration and teaching and the duration of the appointment should be determined in each individual case. The criterion should be whether the experience will enhance the postdoctoral's progress toward independence and excellence in research and graduate education.

Of critical importance to the training of a postdoctoral is the ability of his mentors to provide the proper leadership and environment. In some fields, the best possible mentor for a given postdoctoral may not be any university or national laboratory. Apparent restrictions should be removed to allow postdoctoral students to choose mentors and to conduct research.

Few universities, whether public or private, have adequate facilities or equipment for postdoctorals. Both Boards of Trustees and funding agencies, including the State legislatures and budgeting offices should be apprised of the importance of postdoctoral education in the university in which research is a significant part of the educational program. The allotment of existing space and the planning for new facilities should include explicit recognition of the anticipated postdoctoral population at both the intermediate and the senior levels.

Postdoctoral Fellowships should carry with them sufficient support for research expenses so that the Fellow need not depend on his mentor's source of support to carry out his proposed research.

The number of postdoctoral opportunities available at any time should be related to the number of Ph.D.'s and professional doctorate holders who can profit from the experience. The mix between fellowships and traineeships and project assistants in the Physical Sciences might mirror that in the Biological Sciences where approximately one-third of the postdoctorals are in each category. A distinction should be made between the postdoctoral and the employee with the doctorate who is looking for a career as a research associate.

Support for senior and intermediate postdoctoral opportunities should be increased in all fields. In the Humanities and the Social Sciences the senior and the intermediate postdoctoral appointments are and probably will remain the dominant modes of postdoctoral activity. In the Sciences the faculty should be encouraged to take leaves for stimulation of their research interests and renewal of their perspectives. In addition, postdoctoral activity at these levels may have the greatest subsequent impact on the quality of teaching.

Within the bounds of maintaining the essentially American character

of our institutes, the foreign postdoctoral is a most welcome visitor. In addition to the contribution to international education, the presence of foreign postdoctorals has enriched our science and has stressed the international nature of research. This exchange of persons can be stimulated by cooperating in programs that are designed to encourage the foreign postdoctorals to return to their homeland.

Travel of American postdoctorals abroad should be encouraged and the number of opportunities increased. Not only do our people learn what is happening in other countries but they help to further research in those countries. The recent severe limitation in Fulbright Fellowship opportunities is particularly unfortunate in this regard.

Postdoctoral fellows tend to go to those institutions where the scientific leaders are located. Postdoctoral project associates and trainees are likewise attracted to excellence in science, since the research and training grants are generally made with a view to the scientific capability of the principal investigator or the training faculty. As institutions that do not now host postdoctorals are developed to excellence by the attraction of leadership-quality faculty, postdoctorals will follow. Postdoctorals should not be the means to the development of an institution but the measure of its excellence.[18]

Suprainstitutional Coordination and Control

The responsibility for creating and adopting a rational degree structure may ultimately rest with suprainstitutional boards of coordination or control. Various states created such boards during the 1960s to meet higher educational needs emerging in the post-World War II period. At that time American social policy was stated in a number of postulates:

(1) Based on the belief that as much as 85 percent of college-age groups could profit from some formal education beyond high school, universal access to higher education is considered desirable.

(2) A highly developed and industrialized nation needs a continuous and expanding flow of technically and professionally trained individuals to provide the skills and services required.

(3) Higher education should increasingly assume responsibility for using research to help solve vexing problems.

(4) The economic vitality of states, regions, and the nation rests in large part on expanding systems of higher education.

Since each of these elements of social policy required planning and efforts transcending the capabilities of institutions, states began to create mechanisms to coordinate educational efforts.

[18] *Ibid.*, pp. 254-256.

But restrictive factors were also involved in the movement toward statewide coordination and control. As costs of higher education continued to mount, states had a clear imperative to insure the most economical conduct of higher education while still achieving broadly accepted educational outcomes. Some agency clearly needed to prevent unnecessary duplication of programs, particularly the extremely costly ones in the graduate and professional fields. Individual institutions, comprised as they are of highly imaginative professional people, seem almost by their very nature to be aggressively expansionist, both with respect to the number and variety of programs desired and to the variety of degree titles proposed. State coordinating agencies or boards of control, therefore, early turned attention to how graduate and professional work could be accomplished within the financial limits of their states. But efforts to plan rationally have not always succeeded, and the financial burdens on the states have crescendoed with the recession of the late sixties and early seventies. Illustrative of this situation are remarks by Linwood Holton of Virginia:

> As you know, the most expensive programs to establish and operate in higher education are the graduate programs. While there was a need at one time for more such programs in Virginia I wonder how much of a need there still is today.
>
> I say this because the most rapid growth in Virginia's higher education over the past six years has been in the very expensive graduate programs.
>
> For example, according to the 1971 *Fact Book on Higher Education* just published by the American Council on Education, the rate of growth of graduate education in Virginia between 1964 and 1969—five years—was 190 percent. I repeat: 190 percent....
>
> Not only are these programs costly; some substantial people question whether many of them are worthwhile. All of us know that there are in some fields a number of Ph.D.'s that constitute a glut on the market today.
>
> So I would respectfully suggest that before our individual institutions start proposing new graduate programs that they look to see what already exists elsewhere in the state or in the South, or elsewhere in the nation. We could go into regional development with states North of us or West of us as well as South of us.
>
> Actually I think, and I believe you'll agree that our basic higher educational need in Virginia is not more individual graduate programs but on the contrary it's a need to provide more accessibility for higher education at the undergraduate level, particularly for students of lower-income families.[19]

[19]Linwood Holton, "The State's Commitment to Higher Education," *Momentum*, Commonwealth Conference on Higher Education, September 1, 1971.

Generally, the states have adopted one of several different approaches to a more rational assignment of role and scope to the types of institutions comprising each state system. Perhaps the most widely publicized and most rigid is that adopted in California when legislation made the master plan of 1960 operative. That system describes three levels of public higher education: the locally controlled junior colleges, the state colleges, and the several branches of the University of California. The master plan allows state colleges to offer master's level work in the liberal arts and sciences and in some of the applied fields and professions, but "the University has the sole authority in public higher education to award the doctoral degree in all fields of learning, except that it may agree with the state colleges to award joint doctoral degrees in selected fields." During the first decade in which the master plan was operative, the prohibition worked, i.e., only the University of California offered doctoral level work. It did so in spite of mounting restiveness and tension on the part of state college administrators and professors who aspired to full graduate status for their colleges.

A somewhat less inflexible system was embodied in the Illinois master plan which sought to allow each institution to develop freely those programs for which it had outstanding resources and competence, but which would still prevent unbridled and unnecessary growth of expensive graduate and professional programs. The technique used was to create systems of institutions but to allow each system to make decisions subject to a statewide review regarding appropriate levels of program to be adopted. Even more flexible with respect to permissiveness of creation of graduate work is the Florida organization which makes all senior institutions responsible to a board of regents. In principle, the board of regents would assign various roles to different institutions. In practice, the board has been somewhat tolerant of all institutions aspiring to and working toward doctoral level work. Similarly flexible and tolerant of expansion of graduate work into a number of state institutions is the Ohio master plan which also codifies a belief in competition:

> Some competition in graduate study and research seems desirable. Monopoly in higher education may be as harmful to progress and freedom as monopoly in other social institutions: economic, social and religious. When only one institution undertakes graduate study and research, there may not be any basis for comparing its accomplishments and failures with those of other institutions. Competition, moreover, is a spur to effort.[20]

[20]Ohio Board of Regents, *Master Plan for State Policy in Higher Education* (Columbus, 1966), p. 88.

The critical elements of such systems of coordination and control for the nature and extent of graduate education are the methods by which requests for new programs are reviewed and the kind of economic sanctions which are applied. Several states (e.g., Georgia, New Mexico, and Texas) rely on the professional staff of the coordinating or controlling board to review requested programs and to recommend whether or not they should be approved. Oregon has used a standing committee of lay board members to review the need for requested programs; Washington and Ohio use statewide committees composed of representatives from institutions. None of these has been perfectly satisfactory. Professional staffs tend to be regarded suspiciously by individual institutions; lay members are unsophisticated with respect to delicate academic nuances; and committees composed of institutional representatives run the danger of degenerating into political agencies engaging in a great deal of logrolling and back scratching. Berdahl, after looking intensively at a number of different states, describes approvingly the system for program review which operates in Illinois. There, the Board of Higher Education selected a commission of nine individuals of national academic stature, the majority of whom were from outside the state, from lists submitted by each publicly supported institution. This board of scholars was expected to study and review needs for doctoral level programs, to recommend how those needs could be met, and to review and evaluate applications from any state institution to offer advanced degree programs. In performing the latter service, the board would determine the need for such programs, assess faculty qualifications and physical resources, and finally make specific recommendations to the Board of Higher Education.

In addition to reviewing proposed new graduate programs, statewide coordinating and controlling agencies have attempted, with varying degrees of success, to concern themselves with several additional matters related to graduate work. The first of these is the matter of reviewing and approving new courses. Unless such review power is present, expansionist institutions by gradually creating individual courses can reach a point where all of the work necessary for a new graduate program is already being offered. There would be no reason for an agency to deny formal adoption of what amounts to a *fait accompli*. Yet, for an agency to review the thousands of course changes which characterize any dynamic institution would place an almost unbearable burden on any reviewing mechanism. Thus agencies have typically not produced workable procedures for dealing with the matter of individual courses. A second element is the matter of asking institutions to terminate programs which appear to be

unneeded or to effect a reallocation of programs from one institution to another. Statewide boards of control have substantial power to do both but have rarely exercised that power. Coordinating councils do not have such power and indeed generally have not seriously examined the issue. Also clearly influential with respect to graduate programs is the amount of research and public service activity institutions undertake. Much of the expansion of graduate work during the 1960s resulted from federal grants and foundation support. Obviously, extrainstitutional support is limited in time, hence states are concerned about what sorts of continuing subsidy they are expected to provide. As yet, no very successful mechanism has appeared which satisfactorily both allows institutions independence to solicit outside subvention and safeguards future financial concerns of the state.

Several generalizations as to the significance of statewide coordination and control for graduate education can be made. First, there is continued exploration of ways by which agencies representative of the state at large can exert real control to insure rational and economical development of graduate and professional work. This exploration seems to be moving in the direction of statewide boards of control responsible for all public higher education in the state. Legislation in 1971 in Wisconsin and North Carolina to create single boards is illustrative. This quest is brought about by two substantial failures of mechanisms thus far attempted. First, although a principal reason for a standing statewide coordination and control agency is to limit in some rational way graduate and professional work, such limitation does not appear to have come about to any appreciable degree. As recently as 1969, projections of graduate production in 1980, based on institutional plans, indicated about 65,000 doctorates and over 400,000 master's degrees would be awarded annually. In spite of the much publicized oversuppply of doctorates, institutions (particularly developing institutions) continue to request and sooner or later to receive permission to add new graduate programs. Exponents of statewide coordination, such as Robert Berdahl or Lyman Glenny, argue that substantial limitation does take place within the structure, much of it before decisions need be made by a coordinating or controlling agency. However, it is difficult to visualize the kind of information which would support such a finding. Second, boards of coordination and control have had virtually no impact in producing innovative new programs in graduate work. Rather, when programs have been considered, analysis has been in terms of quite orthodox and conventional criteria. Berdahl,[21] for

[21]Robert O. Berdahl, *Statewide Coordination of Higher Education* (Washington: American Council on Education, 1971).

example, lists the three major criteria used to assess requests for new programs: institutional readiness, state needs, and state ability to finance. If coordinating and controlling agencies ever do approach the substance of graduate education, they have the potential to bring about profound modifications in practice.

Accreditation of Graduate Education

Until quite recently, the six regional accrediting associations have not devoted specific attention to graduate programs. Reasons why this has been so range from the highly individualistic character of graduate programs, governed as they are by specific departments, to the fact that graduate work, especially at the doctoral level, is offered by a relatively small number of institutions of such power and prestige that the judgments of accrediting associations would have little real effect on institutional conduct. But as the number of institutions beginning to enter graduate work has increased, especially newer institutions of limited and quite regional visibility, regional associations have begun to consider more specifically the standards and criteria for adequate graduate programs. This distinction is well revealed in comments from the North Central Association of Colleges and Secondary Schools in its policy statement:

> This policy requires member institutions planning to introduce graduate work which represents a significant change in the scope of their activities, to have such graduate work reviewed prior to its initiation. Certain colleges and universities which have shown through the demonstrated quality of their efforts that they are mature graduate institutions are exempt from this policy, however. Examples of these would include the Big Ten institutions, the University of Chicago and The University of Notre Dame.[22]

Although regional associations are increasingly interested in graduate work, most of their statements and guidelines remain relatively broad and seemingly replicate the criteria applicable to undergraduate programs and institutions. However, the North Central Association has prepared a set of guidelines which at once indicates the movement of accreditation into this difficult field, states conventional wisdom regarding appropriate reforms, and provides a checklist of recommended practice within the broad field of graduate education.[23]

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[22]Unpublished letter.

[23]The following recommendations on accreditation follow substantially those found in *Guides for Institutions Offering Advanced Degree Programs* (Chicago: Commission on Institutions of Higher Education, North Central Association, 1971).

Institutions planning to enter graduate work should obviously have demonstrated a high dedication to academic freedom and inquiry and should possess a well-established and adequately supported undergraduate program with a reputation for academic excellence. The institution should be able to demonstrate a general understanding of the meaning and purposes of graduate programs and should recognize that such activities are considerably more costly than undergraduate efforts. Graduate work requires both a distinctive faculty which has a reputation for scholarship and publications and which blends a core of solid theorists and specialists, and a strong supporting faculty in related and complementary departments. Because of the individualized nature of graduate work, institutions should not enter upon it without the ability and willingness to support the lighter teaching loads and research interests of a graduate faculty. Obviously, library and laboratory facilities and equipment will loom much more costly for the graduate institution than for the undergraduate college. An institution must be prepared to accept those substantially greater costs.

Because of the uniquely American pattern of conducting undergraduate and graduate education in the same institution, the high degree of interrelationship between levels should be clearly understood and accepted. To the previously-made point that a strong undergraduate program is a prerequisite for initiating a graduate program can be added the point that strong master's level work in a variety of fields should be present before an institution undertakes post-master's level work. Further, it should be recognized that a graduate program is not simply adding some new and more advanced courses to the undergraduate curriculum. Complete and well-thought-out programs are essential and involve creating a suitable critical mass of graduate programs with a full complement of supporting courses and instruction. Thus, an institution which ostensibly wants to create only one or two graduate programs would be well advised not to create any without planning a substantial entry into graduate level work. Once the matter of relationships is understood and accepted, institutions should ponder several general curricular considerations. Programs should be clear, comprehensive, and detailed so that students and faculty each know what is expected of them. However, because of the professional nature of graduate work, there must be a great deal of flexibility so that individuals can progress toward a highly idiosyncratic professional goal. "The curriculum should be flexible and tailormade to the needs and background of the student, but it may and probably should specify some common core of courses, experiences or competencies."[24]

[24] *Ibid.*, pp. 4-5.

Also there should be balance between specialization and breadth, for too narrow a focus results in loss of perspective and too broad an experience precludes development of highly specific research and practice tools. Throughout the program, stress should be placed on the development of competencies to do original research or to apply research findings to applied tasks in a deeply understanding and imaginative way. In addition, programs should be so constructed that graduate students are encouraged to study in cognate fields largely related to and supportive of their fields of concentration. And students should be placed in situations which require them to grasp relationships and interrelationships which when assimilated produce an integration of a broad field. Generally, the reasonable amount of time to be consumed in a graduate program should be clearly specified and enforced.

Just as a critical mass of faculty is essential before graduate programs should be attempted, so a critical mass student body should be assured before institutions enter this kind of education. Because graduate study is advanced effort and requires high intellectual abilities, institutions should constantly attempt to attract better qualified students and to make available sufficient scholarship and fellowship funds to subsidize an adequate number of graduate students.

> The general pattern for admission to graduate school requires meeting an institution-wide minimum standard based on holding a Bachelor's degree and a superior record of undergraduate accomplishment. Various departments may add their own requirements to a minimum. Among these are requirements such as a certain number of credit hours in the undergraduate major field or related areas, letters of recommendation from undergraduate faculty members, especially if the applicant seeks an assistantship, results of the Graduate Record Examination or similar tests, and personal interviews. Probationary admissions may be justified when marginal or inconsistent evidence is found.[25]

With respect to degrees, institutions should seek clearly to differentiate between the various generic graduate degrees and offer only those for which the institution has clear competence. Generally several discrete types of degrees are appropriate. The master's degree in arts or sciences is usually awarded for a one- or two-year program beyond the bachelor's degree and should signify a superior record of academic accomplishment. The professional master's degree in such fields as education, music, or business administration would similarly consist of one or two years of courses

[25] *Ibid.*, p. 8.

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and seminars but would also include definite provisions for laboratory, clinical or field experiences. If institutions offer a sixth-year degree program, such as the Master of Arts in College Teaching or the Diplomate in College Teaching, the standards of required performance should be equal to the standards required for the course and seminar portion of a Ph.D. program. Some institutions already offering well-grounded master's programs in professional fields may, to meet specific sorts of demands, wish to add other professional degrees, such as the Educational Specialist degree. These would generally assume a solid prior theoretical grounding and would concentrate on experiences necessary to enhance professional practice. Currently, "the Doctor of Philosophy degree program prescribes no specific universal model. Each institutional program is expected to reflect generally accepted standards of doctoral training, with compatible professional and academic goals."[26] Doctoral training involves attainment of independent and comprehensive scholarship in a selected field, hence should consist of formal courses, seminars, discussions, independent study, and research designed to help students acquire as well as contribute to knowledge. For some institutions the Doctor of Arts degree might be an appropriate program, but only if it is truly comparable to the Ph.D. with respect to rigor and intellectual content.

> The D.A. program parallels other doctoral programs, with a difference in structure and with an emphasis oriented toward developing teaching competence in a broad subject matter field.
>
> The program of study for the Doctor of Arts usually consists of: (1) work in the area of concentration at the same level as the Ph.D. and in the same academic fields, but often more broadly defined; (2) work in relevant areas of professional education; (3) mastery of research tools; (4) scholarly investigation; (5) undergraduate teaching internship; and (6) examinations.[27]

And then, of course, institutions may offer one or a number of professional doctor's degrees such as the Doctor of Education, the Doctor of Business Administration, or the Doctor of Engineering. The twin touchstones are intellectual comparability to the Ph.D. degree and an applied emphasis.

The North Central Association guidelines suggest a series of the aforementioned and other specific criteria which should be "considered in planning new graduate programs and in reviewing existing ones:"

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[26] *Ibid.*, p. 12.

[27] *Ibid.*, p. 13.

1. Is the program consistent with institutional strengths, role and purpose?
2. Has the need for the program been demonstrated?
3. Is there an adequate pool of students to justify the program?
4. Have the additional needs and costs in faculty, facilities, equipment and library been determined?
5. Are the available resources adequate for starting the program without depriving existing programs of needed support?
6. Do existing programs have the quality to provide an adequate base for development of an advanced level program?
7. Has the relationship of the proposed program to existing ones in the institution been fully explored?
8. Is there available an adequate cadre of faculty of sufficient scholarly stature and experience?
9. Are the admissions policies clear and appropriate to the programs?
10. Are adequate funds available for the support of graduate students?
11. Does the administrative structure provide for coordination or direction of the graduate program with the assistance of a faculty committee or council?
12. Has the curriculum been carefully developed in reference to the specified objectives of the program?
13. Are the opportunities for research, field experience and internship adequate in quality and number?
14. Does the program have sufficient structure to insure its distinctive character, while remaining sufficiently flexible to meet the particular needs of individuals with varying goals and backgrounds?
15. Are the programs generally consonant with standards and models existing in other institutions of quality? Is the rationale for innovative patterns clear and are provisions for evaluations included in the plans?
16. Has attention been given to the non-course needs of graduate students such as housing, food, and recreation?
17. Do provisions exist for insuring that graduate students have a voice in the formulation of institutional policies?[28]

New Organizational Forms

For the most part, colleges and universities offer or plan to offer graduate work through conventional structures. The undergraduate college of arts and sciences is divided into departments whose members offer or broadly supervise undergraduate courses, offer graduate programs, and direct thesis efforts of both master's and

[28] *Ibid.*, p. 15.

doctoral students. If an institution is mature and well developed, it will usually offer doctoral work in virtually all departments within the college of arts and sciences and to a lesser extent will offer master's level work either as a consolation prize for students judged incapable of continuing or, especially in the case of state universities, as a service particularly to the public schools. Aspiring or developing graduate institutions generally develop master's level work first in virtually all departments. As the departments gain strength and prestige, the institutions begin to offer doctoral work, generally on the assumption that within a foreseeable period of time the doctorate will be granted by almost all departments. However, a few institutions are seeking for various reasons to modify that conventional organization and mode of operation. Although no one modification is found sufficiently frequently to constitute a trend, three approaches appear promising alternatives for institutions facing unique circumstances. Of the following approaches, cooperative arrangements are appropriate to clusters of graduate schools in relatively close proximity to each other; upper division and graduate colleges have potential in the presence of a heavy concentration in junior colleges; and special-purpose colleges which deliberately reject the goal of becoming comprehensive universities seem plausible only for recently created or developing institutions.

Cooperative Arrangements

Prior to 1960 the prevailing mode in American higher education was the single-campus autonomous institution seeking self-sufficiency. But during the 1960s, as costs and available knowledge increased almost exponentially, institutions began to realize that comprehensiveness for any one campus was impossible. Some institutions began to experiment with various sorts of cooperative arrangements, extending from allowing students in adjacent independent institutions to cross-register for courses to merging two institutions whose emphases seemed complementary. Of several widely publicized efforts, Atlanta University, as the University Center for Graduate Studies formed by the predominantly Negro colleges in the Atlanta area, is almost unique in American higher education. The Claremont University Center and Graduate School is a somewhat similar structure, with the graduate school appointing some faculty of its own but, for the most part, serving as a device by which graduate level work can be offered by the independent colleges in the Claremont group. Case Western Reserve University is the result of a federation of the former Case Institute of Technology and

Western Reserve University which brought together the considerable strength in engineering science and management of Case Institute with the strong liberal arts and health-related sciences of Western Reserve. A somewhat similar merger was that of Carnegie Institute of Technology into Carnegie-Mellon University. This merged institution clearly was seeking greater comprehensiveness by joining the research strengths, especially in chemistry, from the Mellon Institute with the somewhat more applied strengths in engineering and management of Carnegie Institute of Technology.

Indicative of a range of possible cooperative ventures are the joint graduate consortium of five private institutions based in Washington, D.C.; the cooperative programs of four colleges and a large university in Massachusetts, all located in the Connecticut Valley; and the Graduate School of the Union for Experimental Colleges.

In 1964, the American University, Catholic University of America, George Washington University, Georgetown University, and Howard University signed a charter to establish procedures for the coordination of graduate study and research among their universities. Although some bilateral arrangements had previously existed within the group of Washington-based institutions, it gradually became apparent that a more formal arrangement would allow fuller exploitation of the several strengths of each of those institutions. An executive officer was appointed and was responsible to a policy board representative of the five institutions. The consortium decided quite early that it would attempt no broad program of operations but rather would develop modes of cooperation deriving from the solution of specific problems, such as reconciling differences in academic calendars, tuition, and course-numbering systems. In contrast to procedures at Atlanta University and Claremont Graduate School, matriculation of graduate students is within one of the cooperating institutions, with the graduate student advisor responsible for selecting the most appropriate resources from those available. Thus, one of the first effects was to enrich the curriculum offerings available to graduate students attending any of the five institutions. Similar departments in each university are expected to consult with one another about staffing and programming developments; however, ultimately each department is responsible to its own institution. The same general principle applies to libraries and other services.

A somewhat different level of cooperation is represented by the University of Massachusetts and Mount Holyoke, Amherst, Smith, and Hampshire colleges. These institutions offer a cooperative Ph.D.

program, with the University of Massachusetts awarding the degree which carries the notation of the cooperating institutions. The requirements for the degree are identical with the requirements for the Ph.D. at the University of Massachusetts except that residence is defined as the institution in which thesis work is done. The graduate council of the university is responsible for the cooperative Ph.D. program, but it does include a member from each of the participating colleges. Generally, whether or not given professors wish to participate in the arrangement is left to the departments themselves; hence there is no universal set of programs into which students at any of the institutions can move. When the cooperative Ph.D. program was developed, the University of Massachusetts was clearly a regional institution and the faculties of the cooperating colleges were clearly a scholarly asset. More recently, the University of Massachusetts has begun to expand and strengthen its graduate faculties so that the cooperative venture is in some respects a contribution of the university to the participating colleges. Nonetheless, the concept of cooperation appears sound and a five-college long-range planning committee has urged "increased cooperation in graduate programs with a view to devising a more systematic method for bringing faculty members at the private colleges into direct contact with the University's graduate program, either by direct participation in the program or by finding opportunities to employ university graduate students in the educational activities of the colleges."[29]

Perhaps the most radical approach to cooperative effort in graduate education is the Union Graduate School of the Union for Experimenting Colleges and Universities. The parent organization came into existence to facilitate communication and program development of a cluster of self-styled experimenting colleges such as Antioch, Bard, Goddard, Stephens, and the University of Wisconsin at Green Bay. Its leaders became persuaded that for many students existing graduate programs were too limited, prescribed, inflexible, and poorly adapted to a rapidly changing society. Thus a graduate school was formed to make use of adjunct professors located at other institutions, with a small core faculty affiliated with the parent organization. Only candidates who clearly cannot obtain their needed advanced training in conventional university doctoral programs are accepted. Once an individual is accepted, a program is created for him individually emphasizing self-directed study. An advisory committee is selected to set all the conditions, subject only to review

[29] *Five-College Cooperation: Directions for the Future* (Amherst: University of Massachusetts Press, 1969), p. 85.

by the Union Graduate School, necessary for the completion of a degree. Rather than meeting the orthodox requirement of a thesis, candidates for degrees are required to demonstrate evidence of high achievement in a unique project. This graduate school came into existence in 1970, hence is still to young to be adequately assessed. However, 123 students are actively working in the program and a series of colloquia have been held which are the devices used to approximate a residency requirement. These experimenting colleges have in the past developed some of the more promising innovations in undergraduate education, such as greater flexibility, greater use of off-campus experience, and increased and more sensitive advising. Obviously, what they aspire to do now is to serve as a similar leavening for graduate education. Their contribution will perhaps continue to be exemplary rather than to influence directly large numbers of graduate students.

Upper Division and Graduate Colleges

The second broad attempt to restructure is in many respects an attempt to revise and make current ideas which emerged during the formative period of graduate education in the United States. The earlier cited desires of William Rainey Harper and David Starr Jordan to divert lower division undergraduate training into feeder institutions never worked out, and the complex university offering both undergraduate and graduate education with the same faculty became the rule in American higher education. However, periodically attempts have been made to resuscitate—with quite uneven success—those ideas. The University of the Pacific in Stockton, California, made an attempt to rely on nearby Stockton Junior College to offer all lower division work, while the university itself would offer upper division and graduate work in the liberal arts and sciences as well as some professional programs. The New School for Social Research began as an upper-level institution providing quite unique programs for a limited student clientele, and in Flint the University of Michigan established an upper division branch planned to offer not only the baccalaureate degree but master's level work as well, especially on a continuing education basis. None of these structures has persisted in upper division graduate form. Almost as quickly as they came into existence, pressures began to mount for offering some lower division work, not only to insure disciplinary articulation but also to obtain a larger flow of students. Despite those failures, a number of states presently are either planning or operating upper division and graduate institutions. Florida Atlantic University

and the University of West Florida were each created as a modern day exemplification of the ideas of William Rainey Harper and as a device which could strengthen and perpetuate a strong junior college movement within the state. In Illinois, New York, Pennsylvania, and Texas new upper division colleges are being created somewhat in the form of the Florida institutions. Since these are all quite new or have as yet not begun to operate, the contribution to graduate education cannot be known. The likely development, as well as perplexities which will be encountered, have been indicated by Altman, who has made the only comprehensive analysis of this sort of institution.

> Existing upper division institutions--public as well as private—tend to offer some postbaccalaureate studies, although the existing pattern makes projection to the future difficult. In all except the Dearborn campus, where the institution is public, planners have envisioned at least master's programs, while several have anticipated offering doctorates. In some cases, such as Richmond College of the City University of New York, doctoral work is not a reasonable alternative since all doctoral work is offered centrally by a university graduate center. In other cases, such as the two Florida institutions, a struggle has developed between the upper division institutions and the established state universities, the former desiring the right to offer doctorates (for both educational and prestige reasons) and the latter claiming (with some degree of correctness) that the limited resources for doctoral programs should not be fragmented among institutions which do not now have the necessary expertise or facilities. The Dearborn experience, however, suggests that without a minimum of master's degree offerings, an institution may encounter difficulty in recruiting both faculty and students.
>
> Future upper division institutions—such as those proposed for Miami, Jacksonville, Dallas, Houston, Minneapolis and Chicago—will probably offer work through the master's degree, although this decision appears more dependent upon need and availability of resources at existing institutions than on any determination that the master's degree is more closely tied to the bachelor's degree than to doctoral studies. Whether the new institutions will eventually offer doctoral programs depends on the availability of resources within the system of which they are a part and on the political strength the new institutions can muster on their own behalf.[30]

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[30]Robert A. Altman, *The Upper Division College* (San Francisco: Jossey-Bass, Inc., 1970), p. 173.

Theme Institutions

A third possible restructuring for graduate work is for institutions to deny the ideal of comprehensiveness and to stress certain indigenous strengths or opportunities to the extent that they become theme universities. In the past, of course, there have been institutions which emphasized one kind of graduate work to the exclusion of others. The Massachusetts Institute of Technology and the California Technological Institute are cases in point. However, over the years they have expanded the range of graduate work so that M.I.T. particularly can describe itself as a comprehensive university polarized around science and technology. And there have been self-denying institutions such as Princeton which have restricted development to a limited number of fields in which the institution could present great strength. Within American higher education, however, there have always been powerful forces pressuring institutions to regress toward a complex, multipurpose role and to seek comprehensiveness in one way or another. Thus, the technological institutes add humanities and social sciences while the former teachers colleges first add strengths in arts and sciences and then move into additional professional fields. Liberal arts colleges take on additional preparation tasks, and at least a third have moved into graduate education. Except in a few states possessing stringent prohibitory legislation, these same forces operate to encourage junior colleges to follow the same expansionist trend. However, leaders of a few institutions are seeking to reverse the tendency of institutions to regress toward the mean. The previously cited University of Wisconsin, Green Bay, is attempting to develop graduate programs interdisciplinary in character and to focus primarily on problems concerning the environment. The University of Hawaii declared in its academic master plan that scholarship would be "fostered with special diligence in areas in which the University has some inherent advantage" and/or "which promise to contribute significantly to the development of the State of Hawaii." In the eyes of its president the university may have a unique reason for seeking distinctiveness in its graduate education and research efforts:

> Located near the center of the World's greatest ocean, at the intersection of trade and travel routes, tropical yet comfortable in climate, volcanic in origin, with high mountains and deep waters close at hand, these not-so-isolated Islands are the home of one of the world's few truly multi-racial, cross-cultural societies....
>
> ...It is natural for a university in Hawaii to interest itself in the history, cultures, and languages of Hawaii's racial groups, both those

> that were here earlier and those which have come later. If any University can develop exciting, relevant ethnic studies programs, we should be able to do it.

Other themes of the university can be attributed in part to its location. The University of Hawaii, a sea-grant institution, is an oceanic university. Because of its climate and location, it stresses tropical botany, tropical agriculture, research in tropical diseases, and tropical meteorology. And, its location, coupled with the existence of the East-West Center, dictates that research in all fields focusing on the Pacific Basin will characterize the institution. While theme is more difficult to implement with respect to the professional fields, even these can and very likely should emphasize uniqueness.

> We should build here the kind of Law School that could only be built at the University of Hawaii. This means, I think, that it might be associated with a strong graduate and research program in Comparative Law and perhaps in the Law of the Sea as well.[31]

Several universities are currently struggling with the problems of how to be unique and serve the growing urban concentrations in the country. As they struggle with the concept of becoming urban or urban-grant institutions, the analogy with the land-grant colleges of the nineteenth century is frequently (though not very productively) used. One institution, however, which is attempting to force the limit of the analogy is Old Dominion University, a public institution which evolved out of an urban extension center of the College of William and Mary. After achieving an independent four-year baccalaureate degree-granting status, it was assigned the mission within the state system of becoming an urban university. Struggling to define what that term means and to determine the implications for program development, the administration and faculty have grappled with a number of issues. It seems clear that the institution should try to redefine its purposes and to seek a reasonably clear delineation of its mission. To meet the challenges of urbanism Old Dominion and other universities located in urban or metropolitan areas should consider possible programmatic responses:

1. It has always been a major task of our universities to provide trained leadership to meet the requirements of a changing society. They should now enlarge their interest in the training of the professional and the technician to include the urban field, since the existing great shortage of well-qualified personnel will continue.

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[31]The University of Hawaii, *Prospectus for the Seventies, January 9, 1970.*

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2. Knowledge about the city needs to be dramatically increased so that the quality of urban life can be improved. The university must push forward the frontiers of knowledge in the field of urban affairs.
3. The process of urbanization must be interpreted to the leadership in our metropolitan communities. The university has a long history of transmitting knowledge discovered in its laboratories and libraries into the mainstream of society. The outreach into the city of its understanding about the city should be no exception.

Obviously, since Old Dominion is just now struggling to discover how to deal with those issues, no prognosis can be suggested. However, if it should succeed in defining operationally an urban university, it could become a model for others to follow.

Although the phrase "graduate education" generally conjures up a vision of a complex university, single-purpose liberal arts colleges have begun to enter graduate work in substantial numbers and with some potentiality for effecting significant change in the nature of graduate study, at least to the master's level. No recent figures indicate the number of liberal arts colleges offering graduate work, but estimates range from 200 to 300 out of a total of between 650 and 700 such institutions. The high point of liberal arts college entry into graduate work came in the 1950s and 1960s, as did the major expansion of graduate work elsewhere. Whether liberal arts colleges continue with graduate work, whether the number entering such work will increase or decrease, and whether graduate programs will be viable for them will depend in large measure on the reasons why liberal arts colleges entered the field in the first place. By far the strongest motivation was the preparation of students, through the master's degree, for the fields of elementary and secondary teaching. Students opted for pursuing master's degrees in liberal arts colleges rather than in state colleges or universities because of sucessful undergraduate experiences in these colleges, preference for the small, relatively intimate academic community, the influence of a particular faculty member, or the presence of a harmonious religious climate. However, the largest number took master's degrees in liberal arts colleges because of geographical proximity to places of work or residence. This matter of work and residency was also involved in liberal arts colleges establishing programs which would be of service to local industries. If a college offered advanced work, business and industry found this to be a decided advantage in local recruiting. Then, too, the demands of supporting denominations have somewhat influenced their related colleges to attempt graduate work.

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But two much more internal forces have also been influential. During the 1960s when faculty members were in short supply, an institution which could allow new faculty members to teach graduate courses gained a competitive advantage in faculty recruitment. There was also a sensed need to have a cadre of more mature students to serve as laboratory and research assistants, counselors, dormitory aides, and the like. Graduate programs provided a method to recruit these, and a few institutions argued that the creation of specialized and demanding graduate courses provided a resource to be used not only by graduate students but also by the most precocious undergraduate students at the institution. Idealism also seems to have been involved: quite a few institutions agreed that perhaps the smaller liberal arts colleges could contribute to the broadly based social need for a master's degree by clearly redefining it and make it once again respectable. A similar sort of argument has been advanced by the relatively few liberal arts colleges which have also developed doctoral programs. General dissatisfaction with the existing doctoral programs in the larger institutions suggested that a smaller, more manageable place could exercise the requisite creativity to produce a better doctoral program. However, master's level work for liberal arts colleges, if it is to be distinctively done, is considerably more expensive than undergraduate programs. If it is not more expensive—and a few institutions have testified that it need not be—there is strong presumptive evidence that the program probably has little significant impact.

The motivations of liberal arts colleges to enter graduate work and the range of approaches used to implement graduate work are revealed in institutional profiles. Antioch College offers a Master of Science Teaching to secondary science teachers participating in the National Science Foundation's in-service and summer institute programs. Colgate University not only offers Master of Arts degrees for people planning to enter public school teaching but also more specialized master's programs in guidance and administration.

Goucher College has a master's program in elementary teaching; requirements can be completed in a presession four-week period and an academic year of two semesters. Hollins College, apparently not so influenced by the need for teachers, offers master's degrees in psychology, which are research-oriented and experimental, and in creative writing, which are designed to conclude with the production of a volume of short stories or poems or a novel. In an effort to overcome excessive departmentalization of graduate programs, Loyola University in Los Angeles offers the Master of Arts degree, which

rests essentially on an interdisciplinary seminar in contemporary thought. A different sort of experience is provided by Middleburg College which has located graduate schools in foreign countries and which attempts to develop high foreign language facility. The University of Redlands not only has its own master's program but participates in an intercollegiate program of graduate studies which is an additional cooperative venture designed to produce Ph.D.'s. With the assistance of Ford Foundation money, Williams College created a master's degree in economics specifically designed to assist and certify students from underdeveloped nations. This particular program tries to relate intensive field experience with classroom experience.

Other Structural Changes

The remaining four real or potential structural changes in graduate work naturally divide themselves into two pairs of somewhat related matters. The first pair concerns the graduate faculty division of time between research and teaching, assuming that a distinction of this sort can really be made in graduate work. Generally, institutions, both developed and developing, anticipate that faculties will devote one-third to one-half of their time to research. (While this research in the past had been grant- and contract-supported, increasingly institutions expect through direct appropriations from state or from other internal sources of funds to support a substantial amount of faculty research. These are aspirations, however, and reactions on the part of state legislators in 1970 and 1971 create some skepticism that these dreams will be realized.) The amount of time spent on research is obviously related to the amount of time spent in formal teaching. Until the end of World War II, faculty teaching loads ranged from 15 to 18 or 21 hours a week. Even in complex universities, translated into courses this would be three to six courses or sections of courses. Especially since the late 1950s this trend has been giving way, with loads in junior colleges being 15 hours; in state colleges and large colleges, 12 hours; in developing complex universities, nine hours; and in developed universities, six hours. The present trend would yield faculty loads of nine hours, or three courses a semester, if the professor taught only undergraduate courses; and three or six hours, or one or two courses, if he directed graduate study. There is some, but by no means universal, sentiment that most faculties should teach one undergraduate and one graduate course; but in a fair number of institutions it is anticipated that the time is not far off when perhaps half of the faculty would teach only one course per semester. Some institutions have allowed and planned for purely research professors,

but there seems to be even more general agreement that such positions are fundamentally inappropriate for educational institutions.

Additional issues include the questions of the extent to which the position of Graduate Dean should be strengthened and whether there should be a separate graduate faculty. Surveys of opinions of graduate deans reveal overwhelming support for the abstract principle of strengthening their roles, but there is relatively little agreement as to how that should be done. Presently, graduate deans are somewhat of an anomaly. They are deans presiding over an important segment of a university's work; yet, for the most part, they are without faculty and have no real power over curricular developments. Operating through the graduate council, they can try to develop broad policy guidelines; and through various monitoring devices, such as reviewing applications, having graduate council members sit on oral examination committees, and spot-checking dissertations, they can seek to maintain some quality control over graduate programs. Increasingly, through the power to administer various fellowship programs they can influence the flow of students into the various departments, and through diverting overhead funds from contract research into the graduate office some can partially influence the nature of research to which the university is committed. Because graduate deans normally report directly to the provost or vice-president for academic affairs, and in some institutions to the president, they can through persuasion influence institutional policy. And in some institutions, where the roles of graduate dean and vice-president for research have been combined, the powers derived from reviewing research proposals and seeking extramural support for research allow additional influence to be exercised on institutional policy.

Although there are no clear trends for change, several developments are being attempted which might result in ultimately giving the graduate dean a more powerful voice. Some institutions have tried to create an administrative tie between deans of separate colleges and the vice-president for academic affairs by creating the two parallel positions of dean of undergraduate studies and dean of graduate studies. Neither of these has direct control over faculties, but each is assigned the function of reviewing faculty appointments and is provided a budget adequate enough to persuade departments to undertake new procedures or to create needed new courses and programs. A related device which appears to be more prevalent in developing institutions than in those mature institutions long accustomed to intensive graduate work is to assign to the graduate dean the

responsibility for reviewing courses proposed for graduate credit and for reviewing the credentials of faculty members recommended for the graduate faculty or for teaching graduate courses. Still another way of strengthening the office of graduate dean is to divert all or a portion of overhead funds from contract research to discretionary administration by that office. As the idea of accreditation of graduate programs has taken hold, some graduate deans have also achieved a measure of additional authority by virtue of the power to invite external visiting committees to review departments proposing to enter graduate work or even to review periodically departments offering graduate degrees. Since the reports of such visitations are directed to the graduate dean, he has through this device alone an important tool to bring about change.

The other issue is the matter of separate graduate faculties. In some institutions, such as Stanford, appointment to a professorial position (from assistant up to full professor) carries with it the privilege of teaching graduate courses; while in others, such as the University of Illinois or Virginia Polytechnic Institute and State University, faculty members after appointment must further qualify to be designated as members of the graduate faculty. As a general rule, the separation of professors into two faculties seems best designed as a quality control technique for developing institutions. For the mature and developed institution, such separation seems increasingly redundant and contributes only to irritation and discontent on the part of the faculties not privileged to direct graduate study.

Predominant Trends

Out of these various thoughts and attempts to make structural and organizational changes in graduate education come four general tendencies. The first is considerable dissatisfaction with departments, considerable experimentation with alternatives, yet little crystallization of opinion on a truly satisfactory alternative. Second, there are attempts to regularize degrees and to specify their meaning more clearly for the edification of both students and faculty. The third is to discover whether to place control of graduate education beyond the reaches of the graduate faculty itself through suprainstitutional boards, regional accreditation, or external visiting committees. Finally, various experiments are being designed to enrich available graduate work, sometimes through institutional cooperation, and to give more precise definition to graduate programs through sharpening the role of each institution. Here the matter of institutional distinctiveness has clearly become a significant concern.

Chapter IV

PREPARING COLLEGE TEACHERS

Historically, the greatest and most vehement criticism of graduate education is that it does not provide training for the vocational choice of many Ph.D. recipients: college teaching. In the broadest sense, this failure is a consequence of the university's emphasis on scholarship and research and the accompanying indifference to teaching. At the 1966 annual meeting of the American Council on Education—devoted, amazingly enough, to improving college teaching—William Arrowsmith dramatically censured the university for renouncing its primary responsibility to educate. In explaining how this has come about and why universities have given priority to research rather than teaching he stated:

> [College] faculties have come from the major graduate institutions and brought with them a style of life and valued goals of the university which are antithetical to the education goals of a college. These faculty teach the only thing they know, which is technical expertise gained in graduate schools. Thus, until universities reform themselves, their products cannot be expected to become vital educational forces. And universities seem unable to reform themselves because of the malignant, pervasive structure which establishes the department at the heart of university power.

This departmental power, he declared, is "protected from above by the graduate deans and administrators who are more and more drawn from the research professoreate and therefore share its aims and ambitions" and is reinforced by the structures of national foundations, scholarly societies, and the American Council on Education. Furthermore, he expressed little hope for improving teaching as long as departments are permitted to promulgate "publish or perish"

policies, reduce teaching loads, and demand early specialization. Although he himself is a scholar with impeccable credentials, Arrowsmith advocated "divorcing research from teaching, for the only likely alternative is to perpetuate teaching as a lackey of scholarship." To accomplish this universities should "create powerful counter-vailing antidepartmental forces, having their own budgets, students, and normalized functions. One device might be the creation of many university professorships having such resources that they can with impunity ignore departmentalism."[1]

Direction of Change

If Arrowsmith's judgments are valid, improvement of instruction may not be possible. If, however, some changes are feasible, a logical approach would be to provide in graduate education some specific preparation for college teaching. Earl J. McGrath, whose entire career has been devoted to reforming higher education, has pointed out the need for such preparation. In his pool of 302 college presidents he found that three-quarters of them believed "that holders of the Doctor's degree were uninformed about the nature of undergraduate instruction...and were unprepared for the professional duties which they...at least tacitly agreed to perform." The opinion of these presidents, according to McGrath,

> suggests that new college teachers, however well versed they may be in their limited specialized field, know little about such things as
>
> 1. The types of students they will encounter in their classes.
>
> 2. The motivations of these young people and their social, economic and even educational background.
>
> 3. The character of the present college curriculum and recent trends in its development.
>
> 4. The extraclass responsibilities the teacher in one of the smaller institutions must assume in the academic as well as the more inclusive social community, and a host of other matters included under the term undergraduate teaching used in its most comprehensive sense.[2]

The following questions, therefore, should be considered in planning changes in graduate education:

1. Does the graduate program in any way help prospective teachers discover and develop a style of teaching which is likely to stimulate undergraduate students? The evidence

[1]William Arrowsmith, "The Future of College Teaching," in Calvin B. T. Lee, editor, *Improving College Teaching* (Washington: American Council on Education, 1967), pp. 57-71.

[2]Earl J. McGrath, *The Quantity and Quality of College Teachers* (New York: Teachers College, 1961).

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suggests that graduate students are exposed to only a limited number of teaching styles. The young professor subsequentiy spends his life replicating those few models and is suspicious all the while of exhortations to try new approaches.

2. Does the graduate training program in any way expose students for a significant time to information about individual differences among undergraduate students and the range of motivations to which they respond? Evidence suggests that at no time are graduate students shown potential relationships between the modes and techniques of teaching and the differing interests and styles of undergraduate students.
3. Does a typical doctoral program provide either the broad coverage or the selective elements of subject matter to create educationally potent courses and approaches to teaching? As McGrath indicated, products of graduate schools really have no conception of the nature of or the means of providing a liberal education for undergraduates.
4. For that matter, does the graduate program do anything to help prospective college teachers understand the nature of a college or to help them function freely and responsibly within a college? Evidence continues to mount that graduate students are not given insight into the nature of the college teaching profession, nor are they helped to develop a system of ethics appropriate to the profession.[3]

Some positive answers to these questions may result from recent efforts of a few universities to create specific programs to help doctoral students become more effective teachers. Based on a premise (which may itself be open to question) that a graduate school and its departments would be willing to contrive a structured graduate program of limited duration in which most graduate students would have some supervised teaching, a new set of principles for graduate education is emerging.

1. Graduate students should be provided a progressive sequence of teaching experience advancing from directed observation of teaching and subsequent discussion of its dynamics to closely supervised episodes of teaching and on to full responsibility for a course or a large segment of a course. Too frequently teaching assistants have been thrown directly into conducting a section and then in subsequent terms or semesters have repeated themselves with no opportunity to extend their

[3]These questions are derived from W. Max Wise, "Who Teaches the Teachers?" in Lee, pp. 78-80.

teaching repertoires. How much better it would be if a graduate student visited classes taught by faculty members his first year and was able to discuss his observations with the instructor. During the second year of graduate work he might teach a section of some generally required staff-taught course and in the third year be allowed to teach a section or course close to his own developing specialized interest.

2. Graduate student teaching experiences should focus on creative teaching and should not become preoccupied with the relatively meaningless and menial tasks of reading and grading examination papers, keeping attendance records, and computing final grades. These duties could properly be assigned to clerical people or could be arranged for under different contractual terms as a minor part of the life of graduate students.
3. Graduate departments and specialized services in the university should inform graduate students on the full range of teaching methods and learning resources which could be used to improve education and encourage experimentation with them. Graduate students should not only be alerted to alternative successful teaching styles but should also be allowed considerable time to examine and experiment with visual, auditory and programmed aids.
4. Too frequently departmental manpower needs have determined little or no relationship to the graduate student's developing scholarly interests. Thus a deliberate effort should be made to relate teaching obligations to the central thrust of a candidate's program. Willing imagination can suggest many ways of accomplishing this: prescribing several lectures in an introductory course, contriving a pro-seminar as a part of an ongoing course, assigning a graduate student responsibility for one phase of an advanced course, or allowing him to direct independent study of an undergraduate or less advanced graduate student.
5. Stress has already been placed on the value of sequential experience, but assignment to each sequence should be based on an evaluation of satisfactory performance of an earlier phase. For evaluation purposes, a growing array of tested techniques is becoming available and ranges from improved student evaluation forms to relatively inexpensive videotape equipment to record teaching performances for subsequent review. After evaluation, some graduate students should be

terminated in a doctoral program if they demonstrate inability to cope with expanding teaching responsibilities.

6. Complaints from teaching assistants emphasize their belief that they are really doing professional work and yet are oftentimes regarded as little more than menial laborers. An institution seriously interested in elevating the role of teaching and the significance of preparation for teaching should foster a climate of professional respect. Here something akin to deliberately providing medical interns with the full paraphernalia of professional status (stethoscope, white jacket, and being called "doctor") would be appreciated. Eliminating the practice by major professors of addressing graduate students by their first name while expecting to be addressed (often implicitly) by their own professorial title could be a first step. Obviously, graduate students also should be provided adequate physical space for their teaching and counseling duties, should be assigned work of truly professional caliber, and should be given full opportunity to discuss teaching problems in a professional way with senior faculty.
7. An effective program for preparing better college teachers requires considerable leadership on the part of administrators, especially of departmental chairmen. Furthermore, successful programs have usually been associated with powerful and respected professors who can influence a total department to give more attention to the improvement of training and supervision of graduate student teachers. With committed leadership many techniques become possible: informal weekly meetings with a supervising professor, specifically organized formal courses on college teaching, use and discussion of new training devices (such as observation classrooms equipped with one-way mirrors), or formalization of relationships with professors in nearby liberal arts colleges so that graduate students might teach in a satellite institution under the supervision of both a mentor teacher there and a senior professor in the graduate institution.
8. Although new Ph.D.'s have spent from eight to ten years in colleges and universities, their interests have been so narrow during their graduate study years that they enter their first appointments understanding little about either the system of higher education into which they are moving or their prospective duties. Thus all graduate students should be provided experiences which will facilitate a greater understand-

ing of the nature and problems of college teaching, the relationship of specialities to the broad goals of undergraduate education, the nature and importance of general academic duties, and the ways by which young faculty members can exert educational leadership both within the institution and in the larger strucure of American higher education. Fortunately, interested departments and graduate schools now have considerable didactic material which was nonexistent in the early part of the 1950s. For example, William H. Morris has edited *Effective College Teaching* (Washington: American Council on Education, 1970), which contains chapters on finding the levers to manipulate institutions and the total organization of higher education.[4]

Incorporating many of the ideas thus far advanced, Koen has outlined the attributes of an ideal program for providing teacher experience for graduate students. He advances these parameters on the assumption that the total institution rather than individual departments should assume responsibility both for the education of undergraduates and for the training of graduate students to teach.

> The ideal training program has seven critical attributes. In the first place it is complete in the sense that appropriate mechanisms exist for the adequate development of graduate students along each of the six dimensions of college teaching (content mastery, course design, management of learning skills, personal contact with students, self-evaluation, professionalism and designing a training program). This assumes that the overall objective of the program is to prepare college teachers. If that is not the case, if T.A.'s [Teaching Assistants] are seen as overseers of laboratories and graders of papers, obviously such a system as the one suggested here is unnecessary. On the other hand, it should be admitted that the T. A.'s are being employed as academic handymen, not being trained as apprentice professionals. Of course, it is understood that a program can be considered complete only under two conditions: there is appropriate training in all dimensions, and it can be shown that the training is successful. This requires adequate evaluation—meaning an objective procedure that is independent as possible of the personal ego involvements of the designers and participants.
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> Second, the program should be efficient in the sense that redundancies among training devices should be avoided, unless there is an indication that more than one kind of input is necessary to accomplish a desired end. It will be impossible, of course, to determine the degree of efficiency attained unless there is some

[4]These principles were generally derived from Vincent Nowlis, *et al.*, *The Graduate Student as Teacher* (Washington: American Council on Education, 1968), pp. 5-23.

method for evaluating outcomes. This in turn entails the process of stating objectives, designing and implementing training experiences and collecting appropriate evidence. Since most content-oriented scholars have little talent or desire for engaging in some of the soggier aspects of evaluation, some university-wide agency, staffed by people possessing the requisite skills is needed. Without proper evaluation procedures there is little hope of systematic progress.

Thirdly, the ideal training program must be practical. This means that the developing teachers must be given full opportunity to come to grips with real teaching, administrative and counseling problems, with help and guidance of the kind discussed earlier readily available to them. Formal courses about teaching without a chance to apply the concepts studied do not qualify on this score. Activities and information for which there is no clear use should be eliminated. There are some fairly subtle distinctions that should be made in this connection. Skills or information which appear to be of little use at one point in a person's development as a teacher may be highly desirable at another. For example, some of the competencies discussed under the teacher dimension called professionalism may be properly reserved for the later part of training—they would probably be seen as having little practical value in the beginning. These considerations have implications for the sequence of training experiences provided.

Fourth, a training program, if it is to be viable and productive, must be seen as legitimate by the academic community, that is, the devotion to scholarship and research that exists on virtually every campus, must be broadened so that the teaching enterprise is accepted as worthwhile and is professionally rewarding. It is in respect to this quality that the active participation of the institution is probably most appropriate. The respect accorded a faculty member by his colleagues in his content area is heavily dependent upon their judgments of his scholarship. His teaching effectiveness receives only scant attention. This is the zeitgeist in which the T. A. operates and he naturally emulates his role models. Programs devoted to training and teaching are not likely to be very successful until they become respectable.

A fifth characteristic which a training program must have if it is to be maximally effective is continuity, by which is meant that despite changing generations of graduate students and the shifting administrative assignments of faculty members, training must be cumulative and transferable. It is typically the case that as each new faculty adviser to T. A.'s assumes the duties of his post, he tends to rely heavily on his personal opinion of the kind of training that is most useful and to set up a system that reflects his values. This mode of operation implicitly assumes that there is relatively little to be learned from what has gone on before—that one approach to training

(as to teaching) is as good as another, and indeed this may well be true so long as there is no systematic analysis of the task, no rational choice of methods in the service of that analysis and only informal intuitive evaluation, It is interesting to note in passing that these three qualities are highly uncharacteristic of a man's scholarly work but they are typical in the domain of teaching.

On the other hand, it is possible to work from an entirely different model. Decision could be made at the university or department level about kinds and degrees of college teacher competency that are considered desirable (and attainable). These would then constitute criteria of success. It should be abundantly clear from our preceding discussion that there are a large number of alternative approaches to a given goal. Each faculty member who serves as adviser to T. A.'s could then engage in a continuing quest for the most effective and efficient training schemes and he could do this as a member of a group which extends across departmental boundaries and across time. Under the typical conditions that exist today this is impossible. It is clear that the scheme proposed here requires two components. The first is a set of records that contain decisions about training objectives, mechanisms and procedures that have been tested and the results obtained. These records need not be extensive but they must be systematic to be useful. The second component is administrative in nature. There must be some continuing structure or agency at either the university or department level which is charged with monitoring the college teacher training activities of the unit. This can be a small office attached to that of the Vice-President for Academic Affairs, on the university level, or a standing teacher training committee on the department level.

As a sixth characteristic a useful training program must be flexible. If there is an overall university program, it must be possible for each college or department to introduce such variations as are necessary to meet its unique conditions. And within a departmental program it must be possible to provide each individual with the help he needs. This implies diagnostic capacities and available resources. In this connection it is particularly useful to differentiate between those graduate students who are strongly-oriented toward a career in college teaching and those who intend to be primarily scholars. The former require a much broader range of teaching experiences than do the latter. While it is proposed that every graduate student would have some familiarity with the teaching task, if only as a lab assistant, grader, or tutor. It is clearly a waste of time and money for an individual with little talent for or interest in teaching to go through a complete training program.

Lastly, a teacher training program should be aggressive. By this is meant that as the T. A. increases in skill and dedication to teaching, he be accorded steadily increased responsibility and autonomy so that by

the time he completes his degree he has some familiarity with all the roles of the college teacher as they were analyzed. Keeping a T. A. instructor in a structured position where his duties are clearly prescribed for him and where the tasks have been highly over-learned for more than a few months (or perhaps weeks) can not be defended as training. It is acknowledged that there are many relatively dull, repetitive aspects to teaching. These must be accepted. But this is not all there is to teaching. If we do not take advantage of the problem-solving capacities, the motivation to teach, and the creativity of our graduate students by involving them progressively in the full range of activities associated with the full role of college teacher, we are not meeting our responsibilities as trainers of new teachers. It is suggested that T. A. be taken to represent Teaching Apprentice rather than Teaching Assistant.[5]

Experimental Programs

A number of these ideas and suggested principles are reflected in some current experimentations with programs designed for better preparation of potential college teachers. Those examples which were relatively successful were based on the twin premises of full financial support for graduate students and a definite temporal sequence culminating in a four-year graduate program.

University of Rochester

The first of these was an attempt to improve training of graduate students at the University of Rochester through developing those skills, traits, and insights necessary in college teaching. As an equal goal, Rochester was also attempting to improve the college teaching its undergraduate students experienced both with graduate students and with fully ranked teachers. This effort seems to have resulted from several factors. First, the dean of the liberal arts college had long been concerned about the improvement of college teaching and was constantly on the alert for devices which could force faculty attention toward problems of pedagogy. He sensed the need within his own office for personnel who could give attention to graduate students and especially to the problems they experienced as they undertook teaching in their respective departments. Second, a professor of psychology who, together with his wife, had spent several years living in student residence halls, saw some possibilities of a seminar on college teaching as a means of decreasing the

[5]Frank Koen, "The Preparation of College Teachers," in Donald S. Dean, editor, *Pre-Service Preparation of College Biology Teachers* (The Commission of Undergraduate Education in the Biological Sciences, 1970), pp. 30-33.

discrepancy between what undergraduate students seemed to want and what they were actually receiving in their classes taught by graduate students. Another basic element in the Rochester attempt was an effort by the English department to revise its freshman English offerings and to use graduate students to teach courses judged as appropriate alternatives for the traditional rhetoric or composition course. Lastly, and this is enormously important, there was general awareness on the part of central administration of the growing national criticism of how graduate students were indeed used as teachers and the fact that so few of these students were given any kind of formal preparation for the task.

The Rochester experiment included several discrete but interacting phases. First an interview and questionnaire study was conducted by attitudes and opinions of undergraduate students, graduate students, professors, and department chairmen as to what was good or bad in the use of graduate students as teachers. At the same time, a rather comprehensive survey was made of criticism of college teaching and of attempts to improve the preparation of college teachers. These data when summarized became background for a second phase, which was to convene a conference of representatives from a number of private institutions to share experiences of preparing graduate students for college teaching. Then each department was solicited to find out whether or not it would be interested in attempting a major revision of the ways in which it used graduate students as teachers. Participation by the psychology and English departments is here reported.

The psychology department required all graduate students to teach in one of the psychology courses, generally an introductory course. In this course a senior professor lectured and a graduate student taught discussion sections. Considerable attention was given to matching graduate students with courses appropriate to their interests and needs; additional effort was made to provide broader experience for those students who taught beyond the one-semester required experience. As part of the teaching experience all students also participated in a seminar on college teaching conducted by the professor who delivered the lectures for the introductory course.

The English department carried out its intention to revise freshman English offerings and created a series of courses, any one of which could be used to satisfy the freshman English requirement. One of these, English 111, was designed for students who might have some difficulty with college-level writing. This course, which was not remedial (it was in fact taken by about a third of all freshmen

students), became the principal vehicle through which graduate students received experience in teaching. Integrated into the project was the accumulation of considerable information about freshmen from an inventory of reading tastes and from tests on both general academic attitude and English aptitudes. The department expected each graduate student to teach one section under supervision, observed him three times, and organized an in-service seminar or colloquium in which students could discuss their problems and anxieties. Additionally, the director of the program rechecked at least one set of papers graded by the graduate student.

The results from these two departmental efforts were various. The senior professor in psychology was particularly satisfied with establishing the principle of teaching experience as part of the doctoral training for all students and with making this a nonremunerated (because graduate psychology students received other financial support), noncredit activity. The several heads of the freshmen English program believed that the accumulation of information about students, the close supervision of graduate student teachers, and the substantial improvement in the freshman English course were all extremely worthwhile. On the matter of seminars opinions differed according to content. Although he continued to believe in the theory of a seminar on college teaching, the psychology professor felt that this was one of the least satisfactory activities—partly because graduate students who were both teaching for the first time and completing their course work did not have time to read from the growing literature on higher education. On the other hand, the graduate English students valued particularly their seminars which tended to discuss quite practical problems such as developing tests and making departmental examinations.

Both departments agreed on the importance of giving careful attention to placing graduate students in appropriate sections for teaching experience. And generally, graduate students who were selected more carefully for teaching responsibilities and were given orientation into the problems of teaching appreciated this effort and felt they had grown considerably as teachers during the semester. Members of both departments also found that two or three years was all the time an individual should spend directing teaching assistants.

Michigan State University

At the University of Rochester it was assumed that senior professors would, at least for a few years at a time, take some responsibility for supervision of graduate students. A different set of

assumptions was made at Michigan State University, which made an attempt to find new ways of improving the instructional quality of graduate teaching assistants in several different departments. The undertaking originated in several concerns and developments at Michigan State University. The first was widespread acceptance that the bulk of lower division instruction at the university was, and would likely continue to be, handled by graduate teaching assistants who all too frequently entered the task of teaching with neither preparation nor direction for improvement. The university had been searching for ways to rectify this deficiency. Second, Michigan State University had long been institutionally committed to innovation in education. Evidence of this was the existence of the Educational Development Program which was designed specifically to encourage innovation and experimentation within the university. And third, the Educational Development Program added to its staff a psychologist, experienced in training instructors for industry, who wanted to integrate some industrially developed concepts into academic operations.

The undertaking began with a period of exploration to develop key concepts which would subsequently be tested. While that was being done, a specialized seminar room was installed immediately adjacent to a television deck enclosed by one-way windows so class instruction could be both televised and observed directly without interference. A program was finally decided on which would meet several criteria. Because teaching and teaching style are quite personal acts, wide individual variation would not only be tolerated but fostered. Hence there would be no emphasis on a single style of teaching. Second, the plan should be economical of faculty time since the Michigan State University faculty valued research more highly than teaching. This led to a consideration of ways in which graduate teaching assistants could be used as part of the teaching process. The design, when finally completed, called for teams of five to eight graduate teaching assistants from each of eight departments to be subjected to a one-quarter (ten weeks) treatment. The treatment would proceed from some introductory discussions with a mentor to experience conducting a (televised) discussion group each week in the experimental classroom. Every Friday each team would meet for a debriefing session during which each member would present a television clip of his most recent teaching experience. His own action would be discussed and improvements suggested. Further, in the expectation that students would test their own emerging ideas with ideas contained in the literature, the design called for a reasonable, available library of materials on higher education and on teaching.

This last, it should be pointed out, proved to be the weakest portion of the entire effort.

The project was carried out much as it had been planned. During its first year, teams of teaching assistants from different departments were subjected to the treatment. During the second year, effort was concentrated on teaching assistants from the geography department. A systematic effort was made to evaluate the project by observing changes in teaching style of graduate assistants over a ten-week period and by collecting in-depth interview and questionnaire data from the trainees themselves. For the most part, the teaching assistants liked the experience and felt that they had grown a great deal as a result of the videotape recordings and the discussions of their performances. Not all departments yielded the same satisfying results. For example, in the foreign language department, the mode of instruction was so stylized and rigid that graduate teaching assistants had no room to change even if they would. At least one department employed a Rogerian style of nondirective teaching, but that also appeared inappropriate for this particular method of in-service training since the role of the teacher was deemphasized.

The experiment at Michigan State seems to have produced several interesting results. The fact that teaching assistants in a number of departments have become conscious of the dynamics of teaching has made them somewhat critical of their own instructors, and this in turn has stimulated discussion of teaching within the departments. The dean of the College of Social and Behavioral Sciences has kept track of the project throughout, has interviewed graduate teaching assistants, and has indicated to the department heads his willingness to entertain budgetary requests for other departments to use the technique. The department of geography, which followed this model and concentrated on preparation of graduate teaching assistants, expected to incorporate this procedure in its graduate program for all students.

Sarah Lawrence College

A much more expensive program, and one which probably has little possibility of direct application by large graduate schools, was an internship program conducted by Sarah Lawrence College for prospective college teachers. However, a description is presented here because of the richness of principle which it illustrates. The program was an attempt to prepare college teachers for lower division undergraduate instruction. It originated from several factors indigenous to Sarah Lawrence College. Throughout the background was

the college's approach to education which insisted on intense personal interaction between teacher and student, limited numbers of courses, and great reliance on tutoring relationships. A principal motivation for this particular undertaking was the long-term concern for teaching held by the president of Sarah Lawrence. She believed that, if the college could be innovative, it might create models which would be adaptable elsewhere. (She also believed that the Ph.D. program was an inappropriate preparation for teaching undergraduate students.) Under her leadership the college had pioneered in programs for mature women and had developed a center for continuing education which focused on these women's educational needs. In connection with the center and its program, the college almost by accident began developing special degrees at the master's level in such activities as the performing arts.

The overall design of the Sarah Lawrence project was relatively straightforward. Women who generally resided in the Westchester County area and had bachelor's degrees were invited to participate in a three-year program to prepare themselves, on a part-time basis, for college teaching. At the end of the three years they would receive a master's degree and hopefully would be accepted not only in junior colleges but in lower divisions of four-year institutions as well. During the first year these women, ages 31-48, would participate in a common seminar, "The American Idea," which would be taught by the leader of the project. In that seminar students would engage in reading a number of documents from American intellectual history and would discuss the ideas in the context of higher education. In addition each student would take one other course, generally in the field in which she wanted to teach. Then, following the Sarah Lawrence pattern, she would be assigned to a faculty adviser and for him would write a series of papers in her preferred field. During the second year, students would take another interdisciplinary seminar and spend some time each week observing a class at one of the neighboring collegiate institutions. Once again each student would be assigned an adviser, and with him she could discuss her observations at the host institution. In the third year, students would teach one or two sections of a course at the host institution and, in addition, would take the third common seminar and another course to strengthen the substantive preparation for teaching.

The program worked generally as was planned. Fifteen students were admitted into the program at the rate of five each year. The common seminars operated substantially as anticipated. However, an attempt to have students read widely about higher education per se

did not prove particularly worthwhile. As in the Rochester experiment, the students simply had too much other reading to attend to professional literature about college teaching. Work on the substantive courses also moved according to plan. The balance between observation and teaching was somewhat asymmetrical. Some students in the second year gained teaching experience; several, even in the third year, spent more time observing than teaching. Placing students as interns or associate faculty member proved time-consuming and difficult. Most of the nearby institutions welcomed observation but were somewhat reluctant to accept people with less than a master's degree as teachers. The women selected for the program were able, and they experienced a tremendous sense of personal growth through the three years of the project. They felt that the combination of the common seminar, actual field work in colleges, and close relationships with an adviser helped them develop a sense of personal and professional identity. It is, of course, too early to tell whether these women will be placed in career positions as teachers or if they will perform well; but based on their seeming comprehension of the dynamics of teaching, their sense of personal growth, and their general attitudes toward teaching, the prognosis appears good.

University of Colorado

Although in each of the three previously mentioned experiments, seminars or colloquia dealing with higher education did not seem to work particularly well, institutions continue to experiment with seminars and probably should be encouraged to do so. It is just possible that out of such experimentation can come a format which would be adaptable. At the University of Colorado in the department of biology the faculty attempted what it called a mini-institute prior to the beginning of the fall semester and then scheduled time throughout the academic year for other seminar activities. During the three-day mini-institute, nine topics were treated: philosophy of teaching biology at the University of Colorado; advances in biology teaching; preparation of learning objectives; the noninvestigative laboratory experience; investigative approach to the laboratory; role of the pre- and post-laboratory experiences; new advances in audio-visual media; criteria for writing laboratory investigations; and teaching for inquiry with films and slides.

During the semester the department conducted four full-day sessions at monthly intervals:

1. Systems analysis approach to improvement of undergraduate instruction: After discussion of the approach, the participants

examined a lower division course and developed a program for systematic improvement. They then created the criteria for and prepared a model biology curriculum.

2. The audio-tutorial approach to teaching and assessment: This entailed an explanation of the Postlethwait System and its possible applications to all levels and types of courses.
3. Teaching biology to the nonmajor: Here each student prepared and evaluated a course outline for a model nonmajor course.
4. A critical analysis of evaluation devices and the preparation of effective test items: Graduate students were given experience in preparing test items and examining them for validity and reliability. These test items were designed to test for previously stipulated learning objectives.[6]

University of Iowa

At the University of Iowa a somewhat different approach was undertaken. There, the biology department organized a seminar which meets every other week and continues for as long as the sessions seem profitable. The seminars are conducted in a generally Socratic method with graduate students bringing into the discussion their own early teaching experiences. The course outline is relatively straightforward: the rationale for inclusion of general biology as part of an undergraduate program, the role of biology in general education, and the purposes of undergraduate education. A discussion of how one actually uses a college course to achieve behavioral objectives opens up the matter of objectives and their relationship to technique. That session generally ends with criteria of excellence for courses, teachers, texts, laboratories and examinations. Considerable stress is placed on outlining an elementary biology course, and each student is required to construct such an outline for group criticism. Being practically-oriented, the seminar then demands that each student construct a single lecture to implement in part his proposed course outline. He similarly must create several laboratory exercises and develop, subject to group criticism, a final examination to test for achievement of the objectives earlier postulated.[7]

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[6]David O. Norris, "A Workshop to Train Graduate Students for College Teaching," in Dean, pp. 88-89.

[7]Richard B. Bovjerg, "Problems in Teaching College Biology," in Dean, pp. 91-93.

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Other Approaches

To round out this sampling of programs intended better to prepare college teachers, the essence of several relatively satisfactory programs will be briefly indicated. In a social science department three levels of teaching are posited, and each student is expected to proceed through all three. Inexperienced teaching fellows attend lectures and instruct discussion sections under the supervision of third-level teaching fellows. At the second level the fellow conducts some discussion sections and gives a number of lectures supervised by a faculty member. At the third level the fellow has full responsibility for a full lecture section and supervises some first-level fellows in their discussion sessions.

In a history department, each graduate student is limited to two one-hour sections of 10 to 14 undergraduates in order to allow greater time for preparation and to insure that he doesn't steal time from undergraduate teaching for his own studies. Two years of teaching are required of all Ph.D. candidates during the second and third years of a four-year graduate program. During the second year they teach discussion sections in the Western civilization course; during the third year, discussion sections in either Western civilization, Far Eastern history, or United States history, depending on their interests. The lecturer closely coordinates the discussion sections, but graduate students participate in course planning and selection of reading materials used in their sections. During the first year of graduate study, students must observe sections taught by faculty members, discussing their observations with those responsible for the course. General responsibility for supervising graduate student teachers rests with each lecturer in the course. However, each graduate student is assigned an adviser who must visit the student several times each year while he is teaching. The student receives academic credit for each semester of teaching and may elect teaching as one of the fields for the preliminary examination. At this institution a good point is made that the graduate student is not a sub-junior faculty member, nor an underprivileged citizen but an apprentice who is acquiring the knowledge, skills, and credentials which are the prerequisites for faculty status.

A political science department conducts its teacher training by requiring each Ph.D. candidate to take a one-semester seminar on the problems of teaching political science prior to assignment as a tutor to undergraduate political science students. The graduate student tutor and the tutees meet several times during the semester, with the undergraduate students' term papers the focus of much of their

discussion. Another history department, largely as an outgrowth of a regional work conference, adopted the requirement that all Ph.D. candidates teach at least one semester, preferably in the third year of residency, and that they take a course on the teaching of college history offered by the departmental chairman. During the year prior to teaching the graduate student must observe the conduct of at least two classes and discuss his observations with the faculty member. All graduate student teachers are visited and criticisms are conveyed to them in a conference. In addition, they must submit tests and examinations to their supervisor and provide a tape recording of at least one sample of their teaching.

An economics department teaches a rather straightforward organization of economics principles through a team of principal lecturer and graduate students. This team meets every two weeks to discuss materials which will be covered and ways they might be treated. Thereafter, the graduate student takes complete charge of his own discussion section and is rarely visited.

And a mathematics department has developed quite a formal structure:

First year:

Fall Term — Four hours a week attending lectures in beginning calculus, finite mathematics (students who have not assisted in the course before); three hours per week in problem sessions; assistance in grading three examinations.

Winter Term — One hour a week attending lectures (for students with previous experience assisting in the course); three hours a week in problem sessions; assistance in grading three examinations.

Spring Term — Repeat of Fall and Winter Terms.

Second year:

Fall Term — Repeat of either Fall or Winter Term of first year.

Winter Term — no teaching.

Spring Term — Four hours a week attending lectures in advanced undergraduate or beginning graduate course in material familiar to the student; one hour a week in problem session for the course and/or preparation of mimeograph lecture notes; homework in examination grading assistance.

Third year:

No teaching.

Fourth year:

Fall Term — Teach one session of a multiple section sophomore or junior level course under supervision of course chairman.

Winter Term — Repeat of Fall Term or else teach, with more or less full responsibility, a junior or senior level course.

Spring Term — No teaching.[8]

Indications

These and other examples of attempts to help graduate students better prepare for teaching are intriguing and may possibly be the main strands of a reform movement. However, one can still be a bit skeptical. The Presidential Advisory Committee on Undergraduate Instruction of the University of Toronto, for example, reported:

> We have consulted an extensive literature reporting many experiments in improving university and college teaching, chiefly in the United States, ranging from systems of teaching internships to systems of in-service seminars in university teaching methods. Most of these relied on professors of the various disciplines rather than professors of teaching methods, and most of them clearly had some merit. But we could not find any evidence that these pilot schemes could be followed up on a wide enough scale to do what needed to be done at any bearable cost of faculty time and energy. One of the pilot schemes that was thought to be most successful, which was conducted with lavish Foundation support, required one-fifth or two-fifths of the time of eight senior faculty members throughout an academic year to plan and operate an in-service seminar for twelve new junior members of the faculty. With or without Foundation support, nothing of this order can be thought to be feasible on the scale that would be needed to provide requisite help to all incoming junior faculty members in a large university.[9]

The logic of most attempts to prepare college teachers is relatively straightforward. Teaching experience is arranged in a definite sequence extending from observation of teaching by the graduate student to experience in conducting an upper division course. Supervision is provided with ample opportunity for consultation with an advisor or mentor professor. Also some exposure to the literature about college education and college teaching is provided, with opportunity for discussion of new ideas in a seminar or

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[8]Nowlis, *et al.*, p. 47.

[9]*Undergraduate Instruction in Arts and Sciences* (Toronto: University of Toronto Press, 1967).

colloquium setting. Yet well-developed programs are still so rare that descriptions of them are the substance of conferences on innovative practices. The question then naturally rises as to why this is so. One reason is probably the dearth of persuasive evidence that these programs make a difference in how graduate students subsequently teach. Some techniques, according to anecdotal evidences, do bring about perceivable changes in how graduate students teach their sections. Thus the Michigan State University experiment, using videotape recordings of teaching assistants conducting classes, produced judgments on the part of both supervisors and participants that changes had indeed occurred; but those teaching assistants were not followed up to determine whether or not there had been any lasting results. This lack of evidence allows Berelsen (and others of his persuasion) to contend that, while he has no objections to a systematic effort to improve the teaching skills of graduate students, he is perfectly willing to allow teaching facility to be developed during the early years of an official academic appointment.

Thus at this point it would appear that one of several alternatives will be followed in determining graduate programs in arts and sciences. First, public criticisms of the quality of college teaching may remain so clamorous that graduate schools will require teaching experience in order to indicate they are conscious of a problem and are attempting to do something about it. A second, and equally likely, option will be the gradual demise of such programs because of other demands on the time of students and faculty. As a third, and seemingly quite unlikely, option a few institutions (hopefully, prestige universities) will make a comprehensive study of some long-term effects of a supervised pedagogy curriculum organized for graduate student teachers. Models of how such studies could be conducted exist, but whether major graduate institutions will attempt them is highly conjectural.

Given the lack of evidence, the generalized professiorial disinterest in the techniques of teaching looms as a substantial barrier to widespread acceptance of a system of teaching experience. Various questionnaire studies indicate that college professors do view teaching as an important activity from which they gain great personal satisfaction. Nevertheless, there seems to be a pervasive attitude that college teaching is a highly individualized activity which each must acquire through experience—unaided by others—or through study of specific techniques. Indeed, some professors regard teaching, even by teaching assistants, as such a private matter that it would be almost obscene for a senior faculty member to visit the classroom of

an aspirant professor, much less to discuss practices with him. Until such intransigence is alleviated, systematic programs widely adopted by all departments in a graduate university are unlikely.

Even if long-held attitudes could be changed and persuasive evidence could be accumulated, an emphasis on preparation for teaching in a graduate program poses serious temporal and logistical problems. So intent seem graduate students on acquiring substantive knowledge in their specialty and on developing the skills necessary to produce a satisfactory dissertation that any infringement on their time is judged an imposition to be resisted. Faculty—similarly preoccupied with their own specialized interests, with normal departmental politics, and with administration—find the tedious hours required to supervise and consult with graduate teachers a luxury they simply cannot afford. This conflict over use of time epitomizes the central issues in graduate education. Is a graduate program designed to develop high substantive competencies, or is it designed to prepare individuals for a real-life vocation? In aggregate the various changes discussed in this monograph, if generally accepted, would suggest a gradual resolution of the issue in favor of preparation for a profession, but the dead weight of inertia of a hundred years of existing practice which professors find personally satisfying remains a serious retardant.

Despite these negative comments, however, attempts on the part of graduate schools to add a teaching dimension to the programs of a substantial majority of graduate students seem worthwhile and should be encouraged. As devices to facilitate the effort, several necessary conditions should be realized. The first is an acceptance of greater structure to a total graduate program. So long as the length of a doctoral program is indeterminate and graduate professors may add on course, seminar, or research requirements at will, a systematic inclusion of teaching experience will probably fail. Current interest in better definition of structure suggests that widespread integration of a teaching experience into the graduate program might occur.

Repeatedly, evidence emerges that if departments are expected to assume responsibility for a teaching dimension, highly irregular patterns of practices will prevail. Therefore, in some way or other, graduate deans, aided and supported by presidents, should assume central responsibility for establishing the broad outlines and minimal practices of a program. This may suggest the necessity of providing an associate dean for instruction who would try to bring departmental practices into some kind of general alignment.

The last provision is of a different and much more profound order. That is for graduate schools and their departments to reexamine criteria used for admitting students into graduate study. Present criteria still emphasize intellectual power and interest in a subject. These traits have generally been assumed to be the essence of a successful college teacher. Yet there is room to ask, "But what if they're not?"

Chapter V

OLD AND NEW ISSUES

Changing Purposes

Whereas the various professional fields—medicine, law, engineering, business, or education—reveal a somewhat consistent set of changes, innovations, and proposed reforms, graduate education in the arts and sciences does not. This fact probably reflects that, although there may be some confusion regarding purpose of preparation in professional fields (practitioner or academician), effective practice is a major goal and ineffective practive becomes visible relatively quickly. Thus social workers themselves could sense that a training program preoccupied with psychological bases of behavior was too limited a preparation for contemporary social work practice, and employers of engineers who were prepared during the period of heavy emphasis on basic engineering science were quick to demand that more applied work be added to engineering education. No such immediate assessment of the relationship between preparation and performance happens with respect to master's or doctor's level work in the arts and sciences, especially in the humanities and social sciences. For example, since the large majority of recipients of the Ph.D. in history are employed as historians and spend the bulk of their time teaching history, serious gaps in training historians in research methodology can continue unnoted decade after decade. Even more fundamental to the lack of consistent reform movement in graduate education in the arts and sciences is the vast uncertainty which has characterized graduate education since its emergence in the American university. Only when agreement on purpose crystallizes (if it ever does) is there likely to be consistent innovation and evolution in graduate educational practice. Such agreement will necessarily have to reconcile seemingly irreconcilable purposes.

Character Formation

One purpose, which has rarely controlled the main course of development of graduate education but has been sufficiently determinative to affect peripheral practice and to contaminate questing for other purposes, is that graduate education is intended to produce broadly learned men. This point of view has its roots in the beliefs of nineteenth century educators such as Woodrow Wilson, who believed that the college was responsible for purveying a liberal and humanistic culture to students—and graduate education even more intensively so. Wilson believed that

> the true American university seems to me to get its best characteristic, its surest guarantee of sane and catholic learning from the presence at its very heart of a College of Liberal Arts. Its very union with the College gives it, it seems to me, the true university atmosphere, a pervading sense of the unity and unbroken circle of learning.[1]

The graduate school at Princeton should, according to Wilson, be located in the center of the campus and should provide residential facilities for both students and faculty, to the end that graduate students could develop into well-rounded, humanely learned individuals. Such a goal for graduate study did not prevail generally in American universities although the mere existence of this point of view did affect their rates of development. Thus, for some time, Princeton remained wedded to a faith in the liberal culture and divorced from the more pervasive forces in American higher education of specialization, science and qualification; whereas Harvard, in spite of the reactionary efforts of such people as Charles Francis Adams and President A. L. Lowell, emphasized a more Germanic education (which President Eliott stressed) and took a place clearly in the vanguard of graduate schools seeking different outcomes. Although it can be argued that graduate studies designed to produce broadly learned individuals never really had much of a chance to become characteristic in view of the powerful forces of science and technology, a yearning for that more pristine ideal continues to crop up in discussions of reform in graduate education. For example, Mark Mancall in a analytical essay concerning the nature of graduate education has observed that

> The graduate curriculum provides little or no time for broad education experiences which have been largely relegated to undergraduate education where, in turn, the product of the graduate curriculum executes his task but poorly. The decline of political

[1]Woodrow Wilson, "Princeton for the Nation's Service," *Science*, 16 (1902): 728.

theory, social thought, fear on the part of many graduate students to engage in speculation, the desire for intellectual security as opposed to the willingness to challenge accepted conclusions, the formation of the thesis into a research project—all these witness the decline of originality and the rise of mediocrity among our students. Except in rare cases the system tends to perpetuate mediocrity and honor the performance of tasks rather than to encourage speculation. The growth of knowledge is too often measured by the addition of new facts rather than by increased wisdom. Furthermore, these characteristics are perpetuated increasingly at the faculty level as the habits of graduate education become ingrained in students who become faculty members. In short, the primary objective of graduate education as presently constituted is the direct performance of tasks, and William James' criticism of graduate students as "meek in the eyes of their examiners" is as true today as it was in 1903. The cult of specialization and professionalization is tending to destroy the concept of a community of learning, and those tentative efforts now being made to cross disciplinary lines as a means of reintegrating knowledge, both among faculty and students, must be encouraged by changes in the structure of graduate education itself, if we are to develop the university as a truly intellectual center.[2]

Preparation of College Teachers

A second purpose of graduate education, and historically the most important, has been and is the preparation of teachers—originally the preparation of college teachers but more recently the preparation of both secondary school and college teachers. While the proportion of Ph.D. recipients who become college professors, especially in the natural sciences, has dropped and may continue to drop, this purpose is still central. The paradox of this goal is that the traditional training program of graduate study does nothing to prepare individuals for the practice of college teaching. As earlier indicated, the most serious debates concerning graduate education have been over this matter. On the one hand, most graduate faculty members believe that graduate training in a broad comprehension of a single discipline, coupled with intensive study of a small segment, is the best preparation for teaching. Critics of this stance, including a substantial number of university presidents, contend that since teaching undergraduates is likely to be the professional destination of a majority or substantial plurality of graduate students, programs should be designed to embrace several disciplines and should provide explicit preparation for the task of pedagogy.

[2]Mark Mancall, "A Proposal for the Reformation of Graduate Education at Stanford University," *The Study of Education at Stanford*, Vol. VII, *Graduate Education* (Stanford University, 1969), p. 63.

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Research

The third purpose of graduate education, to prepare people for research and scholarship in a specialized field, seems to have largely determined program content. Certainly, the contention that the Ph.D. degree is a research degree has perpetuated such matters as faith in the thesis as the apex of a graduate program and research productivity as the proper hallmark for the successful graduate. However, below the surface, paradoxes appear. Within the natural sciences the programs have been contrived to produce technically competent research workers, but in the social sciences and humanities the clear relationship between the program and the practice of research becomes clouded. Virgil K. Whitaker made this point as he reflected on his experiences as dean of the graduate division at Stanford.

> [He] had to learn sometimes in the hard way how different are the problems in the sciences or even in the social sciences and how different are the basic attitudes involved among students....One fundamental difference is that students in the sciences are primarily motivated toward research, those in the humanities toward teaching. Students in the social sciences probably vary between these poles from department to department....There is a major difference in the concept of the Ph.D. itself, once again with the sciences at one pole and the humanities at the other. In the sciences, broadly speaking, the Ph.D. program is thought of as training in methodology and the dissertation often becomes merely a major research exercise demonstrating the candidate's mastery of the methodology of his subject. In the humanities, on the other hand, professors are relatively indifferent to methodology or have even lost sight of it altogether and the older notion that the dissertation should be a major contribution to knowledge persists. Once again the social sciences lie somewhere in between. This basic concept of the Ph.D. dissertation is one of several reasons why the post-doctoral Fellowship has become an important part of training in the sciences and in many areas prerequisite to a career of teaching and research in a major university, whereas it is relatively unknown in the humanities and far less common in the social sciences. The same difference in attitude toward Ph.D. training and Ph.D. dissertation is an important reason for the somewhat greater average time taken by graduate students in the humanities to achieve the Ph.D....The question of differences between the various disciplines is fundamentally important and needs to be checked out thoroughly. If real diversity exists, then a high degree of departmental autonomy is necessary and desirable, even though it inevitably results in some inconvenience for students and more for administrators. If the diversity is only apparent and results, in reality, from the rivalries and idiosyn-

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crasies of autonomous departments, then the resulting inconvenience to students at least should not be tolerated.[3]

Preparation of Practitioners

A fourth and emerging goal of graduate education in arts and sciences is the preparation of practitioners in a number of fields outside higher education. One aspect of this matter has been accommodated through the establishment of graduate programs within professional fields such as business administration and education. However if, as seems likely, a smaller proportion of graduate degree holders are entering college and university teaching and more are entering the professional labor force in applied occupations, the purpose and the kind of program needed must command attention. Some take a relatively sanguine view that there really is no problem for graduate education in arts and sciences.

> In view of the fact that the Ph.D. has been established in such professional fields as Business Administration, Public Administration and the like, the panel expressed no feeling that the research-oriented Ph.D. should be substantially changed for persons not intending to enter the field of higher education. The main problem with the Ph.D. product in Chemistry and certain other fields appears to be one of attitude and lack of appreciation of the importance and interest of industrial employment.[4]

But others accepting the validity and inevitability of increasingly varied vocational destinations of graduate degree recipients urge serious attention be given to program diversifications. W. Gordon Whaley, one of the most consistent observers of graduate education in the United States recommended:

> Each graduate degree awarding institution should study the relations between the character of its degree programs and the probable life careers of the individuals who will pursue these degrees. A set of alternative types of programs should be developed by each graduate school and information about them made available to incoming students so that they may choose those programs most in their interest at the outset. Up-to-date information on options available might avoid much blind choice and subsequent frustration.[5]

Custodial Function

A different and for the most part unarticulated purpose of graduate education is that it is a substitute for work or military service. Within American society a developmental pattern has

[3] Memorandum of Virgil K. Whitaker in *The Study of Education at Stanford*, VII, p. 110.

[4] *Report on the Conference on Pre-doctoral Education in the United States* (Washington Research Council, 1969), p. 72.

[5] W. Gordon Whaley, *Problems in Graduate Education* (Washington: The National Association of State Universities and Land-Grant Colleges, 1971), p. 8.

evolved which has delayed achievement of full adulthood in its physiological, sociological, political, psychological, and economic dimensions until the late twenties or early thirties. Thus there has emerged a period between adolescence and full adulthood of fifteen to twenty years in contrast to an earlier life style which saw adolescence and full adult status achieved within two or three years. Given this extended period of youth which the work force is unable to absorb, the society must contrive activities for youth which are reasonably satisfying and are not too destructive socially. It is possible to envision graduate education in just such a way. Indeed, the phenomenal increase in graduate enrollments during the late 1950s and 1960s may have represented in part decisions by youth to occupy themselves in graduate work with no particular presumptions of a positive relationship between it and subsequent vocational work. Were this particular issue to be widely and seriously debated, the results might speak forcefully to such matters as the potential oversupply of graduate degree recipients. If graduate education is designed primarily to fulfill a professional preparation, then it can be argued that sharp decreases in graduate enrollments should be contrived. However, if graduate programs are conceived of as healthy ways to occupy large numbers of youth, then one could envision no limit to the numbers of students who should be encouraged to work for master's and doctor's degrees. And, if that mission were accepted, it would mean a reconsideration of program with the goal of producing humanely and liberally educated men and women who could live productive lives regardless of ultimate vocational careers. Much of the literature espousing a counterculture, such as Charles Reich's *The Greening of America*, has seriously urged this newer and quite atypical posture toward advanced education. The charge for graduate programs would be responsive to the young as Kenneth Keniston has described them:

> These young men and women seek new forms of adulthood in which the principled dedication of youth to the betterment of society can be continued in adult work. . . . They seek a new orientation to the future—one that avoids the fixed tasks and defined lifeworks of the past in favor of openness and acceptance of flux and uncertainty In their openness they stress not ends but means; not goals but style; not programs but process; not the attainment of Utopia but a way of doing things. . . . They seek new values for living, values that will fill the spiritual emptiness created by material affluence. . . . The new radicals are at least confronting them more directly than most of us can afford to. They are asking the basic questions, making the mistakes and perhaps moving toward some of the answers we most

desperately need. For this reason, we should wish these young radicals success in their search and, more important, we should ourselves join in this search, for on its outcome rests not only the future quality of human life but our very survival.[6]

Unresolved Issues

A number of issues which have vexed those concerned with graduate education since its emergence in the United States are still far from being resolved. Ultimate resolution, of course, must await the crystallization of opinion or consensus regarding the nature and purposes of graduate education. For example, if graduate education were truly changed as spokesmen for counterculture urge, the entire debate about whether a thesis was an original contribution to knowledge or simply an exercise of a needed skill of inquiry would be rendered moot and academic. However, some tendencies suggest partial resolution of a few of these old and well-debated issues.

Foreign Languages

Perhaps the most widespread change pertains to university requirements of demonstrated proficiency in foreign languages for candidates for advanced degrees. Foreign language requirements have been justified throughout the history of graduate education on several grounds. First, it was presumed that knowledge of French and German were characteristics of the educated scholar and that no one achieving a graduate degree should be without those characteristics. Second, it was assumed that a scholar trained for comprehensive grasp of a discipline would need to read scholarly works in languages other than his own. And since it was assumed that the two most widely used languages in scholarship were French and German, these became the standard requirements. In spite of rather conclusive demonstrations that the language requirements were only hurdles hastily prepared for by students and not at all indicative of whether the language would or would not be used in scholarship, the requirements were maintained. But recently changes have been taking place, the most general of which is the transfer from the university to the departments of the responsibility for determining foreign language requirements. This development has taken place almost simultaneously with the rapid development of quantification as an essential tool for research and scholarship. Thus the argument is that there are a number of languages, verbal and quantifiable, and only those scholars directly and intimately involved in a field are in a position to know the appropriate languages for graduate students to cultivate.

[6]Quoted in William Braden, *The Age of Aquarius* (New York: Pocket Books, 1970), pp. 52-53.

Examinations

Universities are also beginning to examine the appropriateness of the sequence of rigorous examinations. Traditionally a student admitted as a candidate for a degree has pursued all required course work, has taken an exhaustive and exhausting examination covering the entire field in which he has been studying, has completed a thesis, and then has taken an hours-long oral examination or an oral examination combined with a written examination. In a sense, this preoccupation with examinations has been a carryover from attitudes toward education which were indigenous to undergraduate colleges: coercion and sanctions in the form of examinations were essential to motivate students. The recent relaxation of requirements and attempts to individualize educational programs—aftermaths of student dissent—have been accompanied by a substantial relaxation of examinations. Several alternatives to the traditional pattern have been attempted. One, to place the comprehensive written examination much earlier in the graduate program and to limit its scope, is designed to reveal whether a candidate has the ability to deal thoughtfully with some portion of the discipline in which he is working. A second variant is to substitute several long papers for the grueling comprehensive examination Another has been to allow students several options to the oral examination by determining its nature: an examination of the entire field before starting to write a dissertation, an exposition of a thesis topic, or a final defense of a dissertation.

Theses

Much less pronounced are attempts to modify the nature of thesis requirements. While theses as the completion of master's programs generally appear to be decreasing in frequency, the thesis as the proper culmination for a Ph.D. program seems almost as well entrenched as ever. However, when over 300 graduate deans were asked to indicate what innovations were being attempted, 53 claimed consideration of elimination of the thesis requirement. There is inclination to accept reality that a doctoral dissertation is not an original contribution to knowledge. A few institutions are exhibiting willingness to substitute scholarly essays in lieu of a dissertation requirement; but the number of institutions exploring this kind of change is still quite limited, except in connection with the Doctor of Arts program.

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Supply and Demand

To these issues—and to the perennial issues of program length and preparation for college teaching discussed in earlier chapters—are added a cluster of concerns which have emerged only since the late 1960s. Their resolution could affect the character of graduate education considerably. The first is the matter of overproduction of doctoral recipients. The conditions which necessitated the rapid expansion of graduate education during the late 1950s and 1960s—demands for highly trained professional and research people and for additional college teachers for the anticipated marked increase of college students—have changed remarkably in a short period of time. While during the 1970s the number of positions requiring advanced degree holders will increase substantially, it will not increase as rapidly as the number of new degree holders. Universities will be able to educate many more doctoral candidates than can be employed in positions which have heretofore required that level of preparation. Unless institutions take corrective action, new doctorate holders of the 1980s will face an extremely bleak future.

Different studies projecting the number of advanced degree recipients by 1980 substantially agree on trends. The more cautious projections indicate between 350,000 and 400,000 doctor's degrees produced in the 1971-80 period; the less cautious, about 500,000. All projections regarding demand on the basis of kinds of positions currently employing doctorates agree that the supply will be substantially greater than the demand. For example, during the 1960s, approximately 60 percent of the total output of new doctorates found their first positions in institutions of higher education; during the 1970s, only 25 percent can anticipate faculty positions, even though institutions are enlarging the proportion of faculty holding doctorates. Doctoral degree holders will therefore be forced, in larger numbers, into nonacademic work, and of that group substantial numbers will be forced into applied activities—administration and the like—rather than into research-oriented positions. Doctoral degree holders probably will not be without jobs because their high degree of education makes them too valuable. However, they will be forced into some new sorts of occupations for which presumably their graduate work should have given them some preparation.

> As the economy grows and changes, and as national priorities shift, a decade or more hence, there will be much use for persons who have academic training well beyond the master's level. Persons with such training, reasonably well adapted to actual job requirements, will have much to offer in a complex society and economy. The

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implications for the content of graduate education over the next decade have not been fully considered. Certainly, the traditional discipline- and research-oriented Ph.D. is not the sole means of preparing people for new roles. Graduate education which has thus far not been much shaken by the current agitation over the goals and methods of higher education may face a period of stressful readjustment as the labor market forces a reexamination of what graduate education is for.[7]

Institutional Involvement

How many institutions then should be engaged in graduate training and at what levels of productivity? The federal government has already tried to exert a downward pressure on the outputs of doctorates through reduction in support for graduate students. In addition, several states are restraining the establishment of new doctoral programs or the expansion of existing ones (e.g. the State University of New York). But overall a paradox has developed. Federal policies and individual decisions in some of the prestige private universities are restraining the growth of some of the best existing graduate departments. Yet, as a rule, the states have been unable to restrain the establishment of new graduate departments in institutions. Roose and Anderson in *A Rating of Graduate Programs* (Washington: American Council on Education, 1970) reached several relevant conclusions. They noted that developing institutions can create new graduate programs which achieve some degree of distinction relatively quickly. However, they questioned whether expansion of the number of programs in increasing numbers of institutions accomplishes anything more than could have been achieved through strengthening already strong graduate programs. They felt that, as a general rule, strong existing programs should be strengthened and that programs which fall below desired standards should be carefully examined and possibly eliminated.

Financial Aid

One intrinsic issue, not particularly new but somewhat novel because of radically changed conditions, is the financial support of graduate students. The number of institutions offering graduate work, the number of students engaged in graduate study, the number of recipients of graduate degrees, and the financial support of graduate education have all been increasing dramatically since World War II. Graduate education is by far the most expensive form of education

[7]Dael Wolfle and Charles V. Kidd, "The Future Market for Ph.D.'s," *Science*, 123 (1971): 7.

per student and appears likely to become more so. One estimate suggests that by 1980 the cost of graduate education could attain an annual rate of 20 billion dollars. A critical question is, who or what agencies should pay what proportion of that amount? Prior to World War II, the amount of direct federal support of graduate students was negligible as was extrainstitutional support from all sources. However, during the early 1960s the increased federal support of students played a significant part in expanding graduate enrollments. "In 1960, 5,500 Fellows and trainees were supported by the federal government at a cost of twenty-four million. This increased to 43,296 awards at two hundred and twenty-six million in 1968."[8] Then in the late 1960s came the substantial slowdown of support of graduate students, not only on the part of federal agencies but on the part of private funds such as the Woodrow Wilson Fellowship Program as well. Now the question is, what changes are likely in the future? Recommendations of such groups as the Carnegie Commission on Higher Education or the Association of American Universities urge a restoration of federal support, albeit with some modification in detail. Thus the Carnegie Commission urges mounting of specific programs by specific institutions to rectify known shortages, and increasing educational opportunity grants. The Association of American Universities recommended "that the direct support of graduate students, requiring a substantial additional investment, should consist of fellowships and traineeships accompanied by cost-of-education supplements to institutions." In the same vein, another panel,[9] while not emphasizing crisis conditions, detailed a number of elements calling for increased federal support. It called for expansion of the NDEA Graduate Fellowships to support 30,000 students by 1975 to alleviate imbalances in the nonscientific fields and in support of part-time graduate students; for increase of education allowance for federal graduate fellowships to a level of perhaps $5,000, with periodic adjustment of this figure if necessary as costs of graduate education rise; for expanded funding for existing NSF, NIH and OE institutional grants to speed the development of new centers of excellence at the graduate level, and a similar program under the National Foundation on The Arts and Humanities; and for supplementation of existing research programs by a program of sustaining grants equal to a percentage of federal research awards received by educational institutions of higher education. These

[8] *Report on Pre-doctoral Education*, p. 10.

[9] U. S. Department of Health, Education and Welfare, *Toward a Long-Range Plan for Federal Financial Support for Higher Education: A Report to the President* (Washington: Government Printing Office, 1969).

recommendations are all based on the premise that there is little danger of producing an oversupply of highly qualified people, particularly if the orthodox diversified Ph.D. program is modified to allow for alternate goals and courses of study. In addition they are all based on the premise that society should be charged for the contribution graduate education makes to the nurturing of intellectual resources and leadership.

But increasingly the argument is advanced that the principal benefits from all of higher education, including graduate education, accrue to individuals, and those profiting should pay in one way or another. A common theme which runs through much recent writing is that students do make educational decisions based on the economic returns anticipated, and that ways should be contrived to facilitate this kind of rational economic decisionmaking. Richard B. Freeman, for example, has suggested two possible modifications of the current method of financing higher education: use of educational loans in place of direct subsidization of students and the awarding of stipends for study in certain fields where there are real shortages. He feels there are at least three advantages to the use of loans. First, students obtaining loans will be encouraged to make more rational evaluations of costs and benefits. Second, tying repayment of loans to subsequent income, as was proposed by the 1967 President's Panel on Educational Innovation, minimizes risk. And third, since some students who can afford full cost of their education will not opt for a loan, more funds will become available for economically marginal students. The second of his recommendations—that is, to grant actual stipends on the basis of the state of the labor market in different fields—has the capabilities to increase the responsiveness and efficiency of the labor market and to minimize overproduction in already saturated fields.[10] Deans of graduate schools are beginning to think in these same terms. Sanford Elberg, Dean of the Graduate Division, University of California, Berkeley, has said that "students are being asked to assume a much greater percentage of their education. . . .The past system was not right. It was too affluent in certain respects. Now, with so many good students in need, priority will have to be given to need more than to merit." For the short run, Elberg favors low-interest loans and tuition awards; but for the long run, "the financing of higher education is up in the air—for the student and for the institutions. All institutions of higher learning may not be able to support a doctoral program—they may have to

[10]Richard B. Freeman, *The Market for College-Trained Manpower* (Cambridge: Harvard University Press, 1971).

stop at the Master's. Perhaps there has to be a new Master Plan of the highest education." While the number of bright young people who want the Ph.D. may continue to rise, "the number who recognize the fiscal facts of life may also rise. Students who see the employment possibilities may settle for the Master's degree to avoid the risk of being over-trained."[11] Thus the current situation is a clear perception of curtailed support for graduate students, considerable hope for restoration of support, yet an increasingly realistic recognition that during the 1970s new approaches will probably be necessary.

Developmental Needs of Graduate Students

The issue of support of graduate education is at least widely recognized. However, an emerging issue of potentially enormous significance is only hinted at in some of the critical literature about graduate education. This has to do with the degree to which graduate education does or does not attend to the developmental needs of students in their late twenties. Some of the reform movement within professional fields seems to have been based on an awareness that certain important developmental needs were being overlooked. Thus, placing clinical or field experience earlier in professional programs has been attempted in part to facilitate socialization into a profession. Attempts to infuse professional curricula with materials from the humanities have been made because of realization that graduate professional students were struggling with problems of ethics, social responsibility, and personal integrity; conceivably the humanities might make a contribution to meeting these developmental needs. But with two exceptions—pleas for interdisciplinary programs which can help make the graduate program more relevant to real life concerns and a growing concern with the socialization of graduate students—little explicit attention has been given to such matters. Suggestive, however, of what might be considered in graduate programs in response to imperatives to meet the developmental needs of graduate students are several areas of teaching and learning elaborated by Joseph Katz and his associates.

> First there is the academic-conceptual area, under which is included much of the traditional subject matter, descriptions, theories, hypotheses, and so on.
>
> The next area is the esthetic-artistic one, the area of feelings, emotions, intuitions sensitivity and sensibility. . . . This approach to reality requires its own sequence of training, and its own standards of performance which, though sometimes subject to a wider range of

[11]University of California, Berkeley, house bulletin, Vol. VI, No. 1, October 1971.

argument than standards in the more exact sciences, can obtain some degree of consensus among qualified people....

Then there is the area of people-oriented activity. This area is in some sense akin to the esthetic, since it also involves the affective and feeling modes of response. For some people, working with others, understanding them and being of help to them, is a favorite mode of dealing with reality....When we think of teaching this kind of "skill," we must bear in mind that its practitioners are often not as verbally facile as the ordinary academician. In this they resemble the artist whose teaching consists less in long lectures than in examples, in long looking or listening, and in the right words, sometimes quite few words, at the right time....There are many students strongly oriented toward the political or administrative life. They might be taught, in the manner of some of the ancient Sophists, to master the arts of manipulation and exploitation. But to teach them the art of satisfying divergent interests without injury to one or several of the parties will require some pioneering efforts....

The fifth area is that of inanimate man-made machines, computers, and the like. Some people find that they can deal with reality best by creating artificial replicas or artificial extensions of it....Here we need two sorts of faculty: those who are particularly adept with students who have a primary orientation toward man-made objects—who need to have it brought into connections with other human activities—and those who are able to impart some of the pleasures and skills of these pursuits to those with some other orientation.

The sixth area is that of motoric expression....given the fact that there is a large number of students whose favorite mode of relating to reality is via motoric expression, the problem of connecting their motoric responses with other parts of their personality deserves much greater attention.

Finally, we come to the art of sociability. Though it tends to be regarded as incidental, it actually occupies a major place in the informal learning that takes place during college, and spans the range from learning manners to developing the capacity for friendships and intimacy. Given the fact that informal learning of it brings only moderately satisfactory results, more attention to the factors that foster good human relations seems desirable.[12]

Katz reasons that if an educational program considered these elements, substantial programmatic change would come about.

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[12]Joseph Katz, *et al.*, *No Time for Youth* (San Francisco: Jossey-Bass, Inc., 1962), pp. 429-431.

Institutional Cases

When this monograph was being planned, it was hoped that several detailed case studies could be included of institutions which were considering major changes in graduate programs in arts and sciences. However, the typical response from graduate deans was that potential changes were likely of minor magnitude and were being made within departments rather than throughout a graduate school or graduate division. Discussion of possible changes by some institutions recently completing self-studies in a sense reflects the problems and issues of graduate education and suggests possible directions for solution or resolution: not that recommendations have necessarily been incorporated into actual practice—far from it. Dwight R. Ladd, after viewing a number of recent institutional self-studies, points out that relatively few recommendations in long, quite imaginative lists are actually translated into ongoing educational policy or practice.[13] But the recommendations are evidence of the general climate of opinion.

University of California at Berkeley

The earliest of these studies was conducted by a select faculty committee of the University of California, Berkeley, Academic Senate, largely in response to the outbreak of student dissent in 1964. The report took pride in the achievements of its graduate program but noted the need to reconsider certain aspects of graduate education.[14] Many of the complaints which undergraduate students had made were echoed by graduates—excessively large courses, infrequent contact with faculty members, disappointment with the quality of instruction, and unchallenging educational programs. Many graduate students, in addition, were profoundly critical of shortages of study space and of a system where teaching assistants performing professional service were treated and regarded as marginal, menial laborers. The report took an unequivocal stand on the purpose of graduate education:

> First and foremost [graduate education] is training and only as a by-product is it education. The graduate is viewed primarily as an initiate undergoing preparation for a defined vocation: historian, economist, or physicist. The task of the faculty is to insure that the student acquires the qualifications and special skills appropriate to the particular vocation. The justification for viewing graduate education as a form of specialized apprenticeship is that specializa-

[13]Dwight R. Ladd, *Change in Educational Policy* (New York: McGraw-Hill, 1970).

[14]The following recommendations are found in *Education at Berkeley* (University of California, Berkeley, Academic Senate, March 1966).

tion is the pre-condition for the discovery of new knowledge or for making contribution to a given field.

But this preoccupation with specialization may have been overdone, with resultant psychological damage to students. The time has arrived to reconsider the concept of specialization and to devise ways it might serve better the growth of the individual graduate student as scholar, teacher, or human being.

Much of the unhealthy preoccupation with specialization comes from too rigid observance of departmental boundaries in required studies and from limitations of graduate programs. Too many departments, adhering to an obsolete concept of the Ph.D. as a master of all fields within a department, present students with the dilemma of accumulating rapidly a great deal of superficial knowledge or of facing an endless academic program to insure complete mastery. The solution lies not in elimination of departments but in the recognition that departments cannot achieve their professed goals of developing comprehensive coverage. Rather should departments prepare students to solve problems similar to those in their subsequent careers. "The emphasis should be on diverse ways of looking at problems, an awareness of what he must learn in order to deal with the problem and an understanding of the bodies of evidence, the concepts and theories which are relevant to a particular problem." A principal barrier to such flexibility and to a focus on problems rather than comprehensive grasp of knowledge lies in the nature of comprehensive examinations given at the end of all course work which imply to the student the necessity of mastering all subject divisions. An important step would be to place the comprehensive examination very early in the student's training and to require only that he demonstrate an ability to work within the general field of his concentration. Thereafter, examinations would be more a series of tasks, each independently performed as in the case of papers and minor research reports. The dissertation could then be more sensibly approached and could become a natural culmination of a period of progressively deep study.

The concept of students actively demonstrating skills rather than broad comprehension also implies a different posture regarding foreign language examinations. In a majority of cases, language requirements do not achieve the objective of providing an essential piece of intellectual equipment. The solution is not to discard language requirements but to seek ways of integrating language facility in actual work. Thus, the language requirement should be maintained only by those departments for which it is truly germane.

The concept of a comprehensive departmental curriculum has also contributed to excessively long programs for graduate students. While it would be unfortunate for a university-wide committee to dictate to any single department precise time limits for graduate programs (there are substantial differences in requirements of the various fields), departments should be expected to conform to some generally recognized criteria. Thus the report recommended that "departments should make certain that capable full-time students having a sound preparation can earn the master's degree in three to five quarters and the Ph.D. in three to four years. The Graduate Council should periodically review all current graduate programs and report whether these norms are in effect."[15]

The report continued by outlining a paradox. Comprehensive departmental programs can be—and probably are—too inclusive and too limiting. Contemporary scholarship is increasingly interdisciplinary, yet graduate education continues to be almost exclusively limited to work within single departments. Faculties which require outside course work do so in a perfunctory manner and, as a general rule, do not assign the "outside field" any substantial weight in examining procedures. To rectify this serious deficiency a considerable array of interdisciplinary courses should be organized around specific problems. With a problems orientation, students are provided an intellectual reason for pursuing work in related fields. For such courses to be developed, departments must be willing to release faculty members to offer joint courses and students must be encouraged by their advisors to experience these new sorts of curricular undertakings. Thus departments are urged to allow graduate students in close consultation with faculty advisors from several departments to develop individual programs of advanced individualized study as a real and respected substitute for the major field typically covered in the comprehensive examinations.

A serious discrepancy in the graduate programs at Berkeley is the divorce between the graduate student's research on his dissertation and his teaching assistant experience. While many palliatives could be suggested, one important new direction would be enlarging the idea of research to include forms of inquiry intended to enable the inquirer to communicate his findings to students. "Departments should allow all graduate students to participate in undergraduate teaching appropriate to their skills, and should grant course credit to graduate students for work designed to relate the graduate curriculum to the problems of teaching."

[15] *Education at Berkeley*, p. 163.

The writers of the report also believed that the research paradigm has dominated graduate education at Berkeley to such an extent as to become a general cause for alarm. The actual number of true research scholars is probably only a fraction of the total number of successful doctoral candidates. In addition, large numbers of candidates complete all requirements for a Ph.D. except the dissertation and then fail to complete the dissertation for a variety of valid reasons. The time has come to question the whole system which makes the Ph.D. the only acceptable form of certification for college teaching. To the end of having the University of California at Berkeley take a position, the select committee recommended that "the Graduate Council should frame necessary legislation creating a new degree of Doctor of Arts to require preparation equivalent to that normally required for advancement to candidacy for the Ph.D., but without requiring a dissertation."

The report recommended reversing the tendency to regard early graduate years as provisional. For example, a number of departments tailor the first graduate year to a master's degree and view it as a device for thinning out the graduate student body. The first year's work is thus meant to compensate for inadequate admissions procedures. This condition is aggravated by the nature of the preliminary examinations, which present still another hurdle and stress the conception of the provisional character of all work taken up to that point. The net effect is to harrass students with endless examinations designed to settle the question of competence, a question which should have been settled at the point of entry. To alleviate this harrassment and to provide graduate students with a greater sense of dedication to genuine scholarship, greater rigor should be exercised at point of admissions, with the collateral assumption that once admitted virtually all graduate students would be expected to complete the program in which they matriculated.

The report also devoted some attention to somewhat less academic concerns of graduate students. During the last stage of a graduate student's career, his life is dominated by the thesis, and he has only limited contact with professors. Students who remain on campus discover that the only existing community consists of himself and his thesis, while others are forced by economic circumstances to find a job which gives neither the time and facilities to finish the thesis nor the professional recognition due the late candidate and scholar. What seems to be needed to alleviate either of these two problems is a system of research institutes which could provide both supporting stipends and a definite sense of community. Such an institute could

form a natural home for students in the last phase of their graduate careers.

Stanford University

Consistent with the overall point of view of the Berkeley recommendations is an analysis prepared for *The Study of Education at Stanford* and contained in Vol. VII, *Graduate Education*, of the report to the university.[16] This resumé begins with the caveat that the subject of graduate education had been studied much too superficially and that a commission should be created to study in greater depth Stanford's problems in graduate education. Thus the recommendations presented are little more than a working paper. The Stanford study sensed a sharp distinction between graduate programs in professional fields (such as medicine, law, business and education) where the primary emphasis is on professional practice, and graduate programs in arts, science, and engineering, where master's and similar programs emphasize teaching and practice while doctoral programs concentrate on research capability. There seemed little need for intensive university-wide concern with the professional programs, each of which had a uniform curriculum often followed by a certifying examination administered by an outside agency of the profession. Students in the professional fields were early socialized into accepting a common set of professional standards, and each of the professional schools has a relatively large group of students and faculty which form a cohesive group. On the other hand, the Ph.D. programs in humanities and sciences are essentially hand-tailored to meet the needs and interests of individual students and, in many respects, have not solved some of the problems such as socialization and professional standardization which simply do not vex the professional schools.

As a first step in the study, all Ph.D.-granting departments were asked to respond to a questionnaire. Twelve questions in a sense established the parameters of the Stanford inquiry:

1. Should the right to the Ph.D. be broadened so as to permit award of the degree to students whose primary interest is a teaching rather than a research career?
   Or, would you prefer the establishment of a teaching degree such as the M. Philosophy?
   On the other hand, do you find the present program and degree structure satisfactory?

[16] *The Study of Education at Stanford*, Vol. VII, *Graduate Education*.

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2. Should dissertation specifications be amended so as to permit an alternative to the present research emphasis?
3. Should Ph.D. candidates be required to do some intensive supervised teaching as a regular part of their program?
4. Should the graduate course structure and calendar be more flexible than at present?
5. Should faculty evaluation and judgment be based on more thorough comprehensive examinations and the accomplishment of certain specified tasks, or should projects replace courses and units as a principal measure of progress to the Ph.D.?
6. Do you favor a plan under which each graduate student is attached to a faculty tutor, and the tutor assumes major responsibility for guiding and evaluating the student's progress?
7. Should the present nine-quarter residence requirement be dropped?
8. Should course letter grades be dropped as a measure of graduate student performance to be replaced by evaluative statements that would become a part of the student's record?
9. Should a more refined system of evaluating performance and comprehensive written and oral examinations be introduced to replace the present Pass-Fail structure?
10. Do you favor more active recruitment of graduate students?
11. Should Stanford undergraduates be eligible for admission to your graduate department for full Ph.D. study or shorter period of graduate study preliminary to Ph.D. work elsewhere?
12. What other major problems (excluding budgetary problems) confront your graduate programs and what solutions do you recommend?[17]

The results from this questionnaire may indeed reveal one of the most pervasive and untouched problems of graduate education: the relative lack of unanimity in the responses received from 39 schools and departments of the university.

Although departmental viewpoints vary considerably, there are still enough common features among Ph.D. programs at Stanford to allow several specific recommendations. A high degree of departmental autonomy is responsible for the variability in response to the

[17] *Ibid.*, pp. 5 and 6.

questions submitted. *The Study of Education at Stanford* had no intention of questioning this departmental autonomy nor forcing any particular set of recommendations upon any given department. With continued allowance for considerable departmental variation, all departments nevertheless ought to be prepared to make a rational defense for why they do or do not conform to some broadly stated principle.

Regardless of department, the Ph.D. program generally consists of three essential stages: "First, the acquisition of a body of basic knowledge and an understanding of the discipline's methodology; second, a closer examination of a few socialized areas within a discipline; and third, an application of the knowledge and principles acquired in the first two stages in original individual work which is the principal mark of an accomplished professional in any academic field." To permit students to work at these three tasks as diligently as possible departments should decide quite early whether a graduate student seems capable of pursuing the full course of study. Once an affirmative decision is given, it should carry with it a strong departmental commitment to the student.

The burden of a number of the Stanford recommendations was to make the program more flexible. The university had maintained a seemingly counterproductive requirement calling for nine full quarters of enrollment as a graduate student. The recommended change was that graduate students should present the equivalent of six quarters of full enrollment in graduate study, at least half of which must be taken at Stanford. The university-wide requirement for a reading knowledge of one foreign language also seemed unnecessarily restrictive, and the recommendation was made that departments be allowed to set whatever sorts of language requirements they deemed appropriate.

The report also recognized that graduate students would frequently encounter problems and would need consultation which could not best be provided by departments. The report argued:

> In planning and conducting graduate programs it is altogether too easy to concentrate on subject matter and process and to assume that the graduate student is a well-motivated, independent scholar with a well-defined goal. Few would deny that this assumption is false; but there is little concern with the traumas that confront individual students. Uncertainty about vocational aims and life style, the difficulty of matching preferences and aptitudes with the disciplines, and such personal concerns as Selective Service and family problems must contribute to the attrition. The fact is that we know so little about the comings and goings of graduate students that we cannot

even develop accurate institutional-level statistics.

To rectify these and similar problems, the report recommended that the dean of the graduate division should fulfill the following responsibilities:

a. Act when needed as ombudsman for graduate students.

b. Serve as advisor to graduate students when needed.

c. Develop and maintain an accurate up-to-date file on current graduate students in order to obtain accurate survival figures.

d. Insure that graduate students who leave the university either temporarily or permanently without the degree for which they were enrolled are interviewed to seek to determine their reasons for leaving. If this interview is not conducted by the department, it should take place in the Dean's office.

e. Gather information on the present activities of former students including both those who did and those who did not complete the Ph.D. programs for which they enrolled.

f. In cooperation with the schools and departments and the Graduate Students Association make every effort to provide entering and enrolling students with detailed information on courses and programs and departmental policies on admissions and awards.

Hence the Stanford study did recommend a subsequent or intensive inquiry. It did not make any statement regarding the desirability or undesirability of specific doctoral programs designed to prepare teachers. However, it did urge that graduate students could profit from experience as apprentice teachers if the work were closely supervised, if they were given responsibilities commensurate with their skill and interests, if they encountered a variety of teaching situations, and if they were allowed to do some advising in conjunction with teaching experience.

Recognizing the great uncertainty many graduate students feel about departmental expectations and the nature and progression of graduate work, the report urged that students be given detailed and accurate information about expectations and modes of assessment. Applicants for graduate status at Stanford should be provided much more precise descriptive materials concerning graduate programs and expectations for beginning students. Within two years of initial enrollment, students should be informed of their viability as Ph.D. candidates on the basis of research, courses, and examination performance.

Because the lot of a graduate student is normally quite lonely, and because of the significant educational outcomes from small group interaction, departments should create a central place where students and faculty can gather informally, all to the end of contributing to the

socialization of developing scholars.

Stanford University has been attempting to extend the heterogeneity of its student body and the report seeks to conform to that goal. There should be increased minority group enrollment at the graduate level, special attention to the problems of women's education, greater efforts to meet the special needs of foreign students, and a willingness to waive admission or program requirements that seem to interfere with the achievement with specific educational goals.

The dean of the graduate division has long offered a category of courses called "The Graduate Special Program" so that students can contrive interdisciplinary programs which are inappropriately mounted by specific departments. The recommendation is that this program be more widely publicized and entrance of students into these courses facilitated.

Departments did not seem inclined to support an intermediate degree such as Yale's Master of Philosophy. "The vast majority of departments responding argued that the research training resulting from departmental course and dissertation requirements is essential for those students who plan teaching careers." Thus the faculty rejected even the idea of providing alternative tracks within the existing Ph.D. program. However, there was awareness that the all-but-dissertation kind of person represented a distinct problem. The Stanford report recommended that "students who leave the University after completing all departmental and university requirements for the Ph.D. except that of the dissertation should automatically receive a candidate's certificate in their field testifying to their accomplishments."

The cautiousness with which the Stanford faculty approached reform implies critical issues below the surface, as evidenced in the following recommendation regarding course work:

> Departments differ widely in the amount of formal course work required for the Ph.D. We do not wish to intrude upon the various disciplines' privilege of specifying knowledge requirements, but we do wish to raise questions about two common elements of doctoral programs: the assessment of knowledge possessed and the place of research in the graduate sequence. On the first of these matters we urge consideration of providing students with the option of completing formal courses or demonstrating mastery through examination.
>
> On the matter of sequence, we believe there is merit in introducing the students to research work as early as possible in the graduate years. The all-too-common pattern of course work followed by

examinations, followed by research, merely serves to delay immersion into a vital part of the work of professionals in the discipline. It can be a disservice to students who discover too late that they really are not suited to research in the field. If they were provided with a taste of research early, either by limiting formal course work or interspersing it with research, these students might make the discovery early and alter their plans before squandering vast amounts of personal energy and institutional resources. Two years of course work seems to us to be a reasonable maximum limit, to be reduced or combined with research whenever possible.[18]

University of Oklahoma

Presenting a somewhat different attitude regarding changes in graduate education is the report to the people on the future of the University of Oklahoma.[19] The report assumes a steady growth of graduate enrollments and recommends that this growth be fostered to achieve several university goals: to provide the state with highly qualified young people entering the professions with a commitment to the future of Oklahoma; to recruit and keep a well-qualified graduate student body through the presence of a diverse distinguished faculty; to enrich undergraduate education through such a faculty.

After noting the need for more problem-centered programs of study, the need to facilitate easy interchange of graduate and undergraduate students within courses, the need to limit the amount of teaching required of graduate professors, and the desirability of upgrading the conception of graduate students as younger scholars, the report makes a series of specific recommendations.

> To support the general policy stressing growth in favor of graduate education, we recommend some actions applicable to all graduate and professional programs.
>
> 1. Selective admissions standards and recruitment must be reviewed and changed consistent with our objectives, with care that recruiting programs are designed to attract a variety of students from all socio-economic backgrounds, and that recruitment is emphasized among minority and deprived groups.
>
> 2. Procedures to unify and integrate all disciplines of programs should be established, such as: a course of instruction drawing on more than one academic unit; integrated budgetary, fiscal, and accounting practices: centralized, specialized research facility.

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[18] *Ibid.*, p. 22.

[19] Gordon A. Christianson, *The Future of the University* (Norman: University of Oklahoma Press, 1969).

3. Activities and contact with the various graduate professional schools should be related to community and student needs through: establishing active service programs as part of graduate instruction; stressing continuous adult graduate education to permit mobility from one social role to another; sending graduate and professional students and faculty to those parts of the world where their academic interests can be pursued, their talents and future challenges found; promoting faculty participation in community, urban, industrial and professional activities to strengthen the relevance of graduate training.[20]

In elaboration of those principles, the report recommended that there should be no set progression from undergraduate to graduate work. Professional schools should include within their curricula work of a liberal nature, while at the same time the university should encourage highly specialized undergraduate courses of study. To prepare students to exploit more fully this seamless progression, a great deal more attention to orientation counseling of students would be proper, but it should also be recognized that early decisions are not necessarily binding. Hence the graduate program should encourage greater versatility and flexibility of program switching.

Considerably greater effort should be made in both the graduate professional fields and in graduate work in arts and sciences to relate academic training to on-the-job experience.

> Intern programs should not be conducted at the expense of intellectual training. However, the graduate assistant should have on-the-job experience in instruction as well as training in the disciplines. . . .and consideration should be given to internships during the final year of medical education. Similarly, legal internships should be encouraged at an appropriate point in the senior year in Law School. For Engineering, Business, and other professions arrangements should be worked out with prospective employers for placement in a business organization to provide actual experience as part of the educational program prior to graduation.[21]

With respect to the problems of relevance and purpose, the report somewhat platitudinously noted: "The graduate and professional programs as expressed in the curricula should have relevance to the future lives of the students in the society. They should insure that questions of purpose, value, and meaning are posed in programs which offer the conceptual framework of thinking about these questions. To accomplish this end, there should be many programs offering different styles, each of which can adapt as the relevance of society shifts."[22]

[20] *Ibid.*, pp. 65-66.
[21] *Ibid.*, p. 73.
[22] *Ibid.*

The Canadian Scene

Graduate work and research in Canadian universities began somewhat later than in the United States and developed much more slowly. However, during the 1960s, Canadian institutions in many respects followed the same lines of evolution detectable in the United States. Since the Canadian experience may suggest that some problems are simply endemic to graduate work regardless of where undertaken, it may be instructive to review some of the criticisms and suggestions for reform which were made in a comprehensive review of graduate education in Canada.[23]

Generally administration of graduate schools has been lax and perfunctory. The graduate dean, as compared with deans of other schools, is in a relatively weak position since he has no authority over budgets, appointments, promotions, and the establishment of new positions; if reform is to come about, the role should be strengthened considerably. Graduate education in Canada has also suffered from inadequate financial support, both for programs and for the support of graduate students. In Canada there apparently was a tradition that graduate work was but a slight inexpensive extension or adjunct of undergraduate education, hence did not require specific budgetary provision. Similarly, little attention had been given to the unique financial needs of graduate students with fully adult family responsibilities, and the need was recognized for more substantial graduate scholarships and less expectation that students would take part-time work.

In Canada, as in the United States, the master's degree has lost prestige. If there is a real need for a master's degree, it should be strengthened, made quite distinctive, and not represent a deterioration in the research expectations of the Ph.D. degree.

Because enrollment growth of certain departments in Canadian universities has resulted in departmental prestige and political power, there has been a tendency to admit too many marginal students. Clearly, more sharply defined and higher admission standards would seem appropriate.

In part due to the tradition of viewing graduate work as an extension of undergraduate work and in part due to the rapid increases in numbers, too many departments tend to require excessive course work. These classes take up such a large proportion of students' time that they are unable to devote adequate time to

[23]W. P. Thompson, *Graduate Education in the Sciences in Canadian Universities* (Toronto: University of Toronto Press, 1963).

research. This old tendency is related to a notable deterioration in research expectations, especially in regard to the thesis. A possible palliative might be to require that a thesis, in whole or in part, be published in a scientific journal before being accepted as satisfying degree requirements.

The Canadian study makes definite recommendations which conform to those found being examined in the United States. The minor requirement, which has deteriorated, ought to be strengthened to give a more interdisciplinary flavor to graduate programs. Similarly, there appears to have been a serious erosion of language requirements and performance levels on examinations. Correction suggests either eliminating requirements, as in the case of foreign languages, or making them truly meaningful. The Canadian report suggested, as Berelson did earlier regarding American graduate study, that the length of full-time graduate study was generally little more than meeting minimal requirements and was largely determined by graduate student financial circumstances.

The Canadian report devoted several pages to a matter which is only now beginning to receive attention in the United States: the tendency of developing institutions to enter graduate work. In Canada, too many small institutions were attempting to carry on graduate work for which they were not equipped with personnel, facilities or financial resources, under the assumption that graduate instruction could be tacked onto the duties of regular undergraduate faculty. These smaller institutions apparently had not recognized that the essential ingredient for effective graduate programs is a first-class faculty of practicing scholars; or if they did recognize it, they lacked the resources to attract capable men. Several recommendations similar to those reforms suggested in the United States may be offered. The National Conference of Canadian Universities and Colleges might be expected to undertake an accreditation mission by setting forth definite criteria and regulations for graduate education to which institutions offering graduate work should conform. Since accreditation recommendations are not binding, these would not limit creative institutional growth, but could exercise a healthy influence. Even without accreditation, institutions are urged to be more self-restraining. "Institutions with limited resources, whatever their size, should restrict their graduate efforts to those fields in which they are specially qualified, should curb their ambitions to undertake graduate work in all or many disciplines, or in all major divisions of any one discipline, and should leave to others fields which other institutions are uniquely qualified to cultivate." Smaller institutions

which nonetheless wish to enter graduate work could consider the possibility of coordination or the creation of consortia similar in form to the Washington Graduate Consortium. Out of such efforts could come real strengthening of the entire Canadian graduate effort.

A Developing Institution

Although the preceding cases primarily present recommendations rather than actual changes, nonetheless, the fact that changes are suggested places those institutions in a somewhat atypical posture. Much more frequently institutions offering graduate work seem content to do things as they have always been done. The fully developed prestige universities have gained recognition, power and prestige from following orthodox modes of graduate education; and the aspiring developing institution sees those same orthodox modes as the route to academic excellence. Illustrative of the lack of genuine attempts to bring about innovation is a large (14,000) developing (to become 20,000), publicly supported land-grant institution which sees its future in following the footsteps of a few nationally prominent land-grant institutions. Its graduate council and graduate dean have considerable power over program review and approval of graduate faculty, and they scrutinize syllabi for courses recommended for graduate status. The council, representing all of the schools, is composed of about half administrators and half faculty with one graduate student representative. In a two-hour discussion of changes in graduate education, the council members revealed that not a great deal was happening. The institution was trying to create a new interdisciplinary program between computer science in the college of arts and sciences and engineering courses which maintained considerable strength in applied uses of the computer. Faculties from the schools of engineering and of arts and sciences had been meeting regularly, and neither faculty was willing to yield enough of its presumed perquisites and prerogatives to allow the interdisciplinary program to become viable. Faculty members from each school seemed so jealous of their discipline and presumed essential sequences of disciplinary courses that cooperation was almost judged contamination. Several members of the council were searching for ways to encourage faculty members of different fields to work together, but had found no good pattern of incentive for change. In part, the search for patterns of incentives was unproductive because throughout the institution departments were generally satisfied with orthodox modes of curriculum design and instruction. This satisfaction seemed reinforced by the posture of some accrediting agency

(this in connection with such fields as engineering and chemistry) which placed strictures on how innovative programs could become. It was further strengthened by the institutional reward system which would not tolerate the long fallow period a professor would have to experience if he became genuinely involved in interdisciplinary work. In addition, an initial period of five to six years seemed essential before a new interdisciplinary complex would allow productive scholarship. Younger people were afraid to commit that much time, while older faculty people were so well established and committed to other activities that they refused to spare the time.

The graduate council seemed aware that the institution was not likely to take even continuing criticism seriously except to make minor changes. The council hoped, therefore, to increase somewhat the selectivity of the graduate departments and, if time permitted, to assess the achievement of entering graduate students for better placement into programs. While course work might seem to some to be excessive, the fact that so many courses were required of graduate students was attributable to the heterogeneity of student background of entering graduate students. Until more homogeneous preparation could be assured, courses would retain their importance as would rather rigorous examinations and adherence to quite traditional theses. Except for teaching posts in junior colleges, there was little predisposition to emphasize training for teaching. Nor was there much real concern for the much publicized excessive length of time which graduate study required.

A few people from time to time almost pathetically talked about possible reforms but without any real expectation that they would be consummated. Some slight consideration was given to the excessively rigid departmental requirements for an undergraduate major on the part of graduate students. There was also some awareness that people within individual departments might be better off if they could talk across departmental lines and cooperate to some extent but again, not much faith that this would happen. Some sensed that graduate students needed much more orientation to graduate work and quite early assessment of individual strengths and weaknesses, but the time required for this careful guidance could not be accommodated within the institutional budgeting structure (which tied funding to full-time-equivalent students in specific courses). Overall, this particular graduate council and graduate dean seemed reasonably assured that the institution would ultimately achieve academic excellence and recognition in orthodox ways. But there was virtually no predisposition to overcome barriers which at least a few individuals recognized existed against innovation.

Forces for Change

This entire monograph has revealed that although graduate education in the arts and sciences is not in the same ferment as professional education, there may be a slow awakening to the fact that conditions in the late twentieth century may be sufficiently altered from earlier times to require rethinking of graduate education goals and of radically changing a number of practices. The radically changed nature of many professions and vocations has already called for changes in graduate preparation. For some new vocations the traditional Ph.D. program serves well, but other activities will seemingly require completely new patterns of postbaccalaureate education. Currently, American graduate education, although attempting to serve a multiplicity of purposes, uses only two basic program patterns: the education of individuals in research and the preparation of teachers for institutions of higher learning. The unresponsiveness of graduate schools to the needs for alternate designs condemns many people to a lifetime of second-rate status in powerful areas largely irrelevant to their training (for example, irrelevant to careers in government, industry and management, social work, and a number of vocations related to the health fields). Similarly, given the short half-life of a number of vocations requiring advanced training, and given the availability of current library resources and faculty members aware of frontier thinking, graduate schools have been almost completely unresponsive to the needs for reeducation and retraining of people in formal extension work.

Because of the organic ties between undergraduate and graduate education, American universities tend to treat graduate students as though they were undergraduates and to organize their learning along custodial or protective lines. Only the student protest of the 1960s began to dramatize that graduate students deserved forthright recognition as junior partners in professional work, rather than simply somewhat older college students. This same linkage of graduate work to undergraduate work is responsible for an ineffective and inefficient funding of graduate education. The cost of graduate education has been centrally borne in most institutions by the budgets of undergraduate colleges supplemented by small internal and larger external grants, for the most part categorically related to research projects. Also, there is little hard information indicative of costs of graduate education. There is the general impression that graduate education is of necessity highly expensive; funds are properly devoted to it without relating those funds to the economically more profitable undergraduate effort. A reason why upper division

graduate institutions have not really succeeded, although there is logical argument to support them, is this unhealthy linkage of undergraduate support to graduate education.

In a very real sense, graduate education is currently suffering from its successes in contributing to the growth of knowledge and to technological advance. These successes have given the public exaggerated expectations of the potential of graduate education. Fundamentally, "all graduate education can do is to make available bodies of knowledge and provide training and skills in the accumulation of knowledge and in methodologies appropriate to the resolution of problems. Ideally, it performs these functions in an environment conducive to intellectual growth and provides for periodic evaluations of this intellectual growth and competence."[24] When graduate students complain that their education does not impart values or provide immediate solutions for social problems, it indicates they have unreal expectations of what graduate education can accomplish.

But program changes are not enough. New options will succeed only if better methods are developed for identifying appropriate candidates, and graduate education has done very little with respect to this matter. Nor have graduate faculties come close to solving ways by which a greater number of minority group members can be admitted into graduate programs from which they could reasonably hope to emerge successfully some years later.

> The graduate school should not attempt to control supply by admissions controls or quota systems but recognize instead that success on their part with new types of programs, aimed at providing highly trained manpower to resolve urgent problems of the present and the future, is the best assurance of maintaining proper balances between demand and supply. Graduate schools have obligations to assess as accurately as possible the opportunities existing for their different degree holders; but they also have responsibility for opening up new types of opportunities.[25]

[24]Whaley, *Problems in Graduate Education*, p. 15.

[25]*Ibid.*, p. 21.

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Chapter VI

GUIDELINES FOR CHANGE

Attempts to Change

Throughout the United States and Canada there is some evidence of hoped for, planned for or actually attempted change, innovation or reform in graduate education in the arts and sciences—but not as much as might be implied by the historic and continued criticisms of graduate education. Within the realm of curriculum and instruction, most institutions are attempting, in one way or another, at least to recognize the necessity for some interdisciplinary programs, and the various associations and learned societies urge interdisciplinary work as an imperative. Similarly, there seems general recognition that the time students spend in obtaining graduate degrees, particularly the doctorate, is excessive and that efforts should be made to compress a complete doctoral program into no more than four years beyond the bachelor's degree. While there is general recognition that this should be done, there is still either reluctance or inability on the part of institutions to impose the requisite constraints on departments to insure that a norm of four years is actually achieved.

In view of the alleged preoccupation of doctoral study with research, the attempts to strengthen research competency and to inject into doctoral programs much more specific—and at the same time varied—instruction concerning research tools and skills constitute a somewhat surprising cluster of recommendations. This is especially characteristic of some of the humanistic fields such as history or English, while mathematical skills are deemed especially essential for the social and behavioral scientists.

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Research regarding admissions processes in graduate education provides reason for dissatisfaction with existing techniques. The slight positive relationships between previous academic performance or measures of academic aptitude and success in courses fail to account for the large bulk of the variance in graduate school performance. Graduate deans themselves and the reports of some of the disciplinary studies of graduate education also express dissatisfaction with the admissions procedure. However, there is no generally acceptable set of recommendations for change, only the aphorism that better admissions processes will mean better graduate students, hence better graduate schools. The intrusion into graduate professional work of large numbers of minority group students and also large numbers of students who previously would not have sought graduate training is forcing thorough reconsideration of the entire matter. Minority group students have also forced graduate schools to examine programs of especial relevance to somewhat specialized groups. Thus there is a substantial groundswell of interest in graduate programs in ethnic studies, in urban studies and, to a somewhat lesser extent, in studies involving the concerns and life styles of women.

Perhaps the most widely discussed potential change in graduate education is the possibility of providing explicit instruction and experience for graduate students in matters of pedagogy and curricular development. This concern may well have been forced first by serious student criticism of the nature of college teaching and second by the serious threat the highly recommended Doctor of Arts degree potentially poses to the Ph.D. degree. A substantial number of graduate schools thus are experimenting with models to provide training and experience in teaching, and these models typically consist of some seminar experience, some observation of teaching and some reasonably supervised teaching experience. The more sophisticated attempts provide graduate students with several different kinds of teaching experience, each kind differing in complexity and longevity.

With respect to the organizational and structural component of graduate education, the overall thrust is to regularize practice and to make patterns more symmetrical. Thus there is awareness that the present American degree structure is highly irregular, with the meaning of such degrees as the Associate of Arts or the Master of Arts being quite unclear. It would seem desirable, then, to clarify the significance of various degree levels and to regularize the time taken for completion of degree requirements. There is also the attempt to regularize the substantial programs for postdoctoral students and to

develop some ways to bring those programs into the central institutional registration process. Similarly, regional accreditation agencies are seeking devices by which to regularize and systematize minimal standards for institutional graduate performance, especially in view of the large number of developing institutions which aspire to full graduate status. Also, partly to control proliferating graduate programs and partly to regularize them, statewide boards of coordination or control are attempting to review and reject or approve recommended graduate programs.

Graduate faculties have finally begun to make some adjustments in matters long the object of criticism and complaint in graduate education. Graduate schools or universities are tending to allow individual departments to determine the necessity for competency in foreign language. Institutions are likewise beginning to modify examining procedures, intending to place critical screening examinations much earlier in the candidate's career. There also seems a disposition to consider elimination or reform of final oral examinations which have too frequently degenerated into rituals or opportunities for professorial sadism. A very few institutions are attempting to modify or even remove the dissertation requirements.

Guidelines for the Future

These attempts to change or recommendations for change in the aggregate suggest some plausible overall directions but are in themselves insufficient to assist planning for the future of graduate education. They do provide a basis from which can be derived, at least speculatively, guidelines and criteria for institutional consideration.

A System of Alternative Tracks

Even though some professors believe that long and irregular periods of graduate study result in deepened scholarship, there is no evidence that this in fact results. Rather, graduate candidates who finish their degrees more quickly seem ultimately to be the more productive. Because people will use their graduate training in any of several different ways, there should be commonly based provisions for quite distinctly different options. The provision of alternative tracks which can provide differential training seems preferable to the creation of new degrees such as the Doctor of Arts or the Doctor of Engineering. As a beginning there should be at least three tracks: a research orientation; a teaching orientation; and, in a number of such fields as economics, chemistry, or political science, an applied

orientation. Assuming a four-year postbaccalaureate program, candidates clearly destined for a research career would devote two years to course and seminar work and two years to perfecting research competency and gaining experience through reasonably sophisticated dissertation research. Yet in some fields the only practical career paths lead to teaching, and in other fields individuals can early detect whether teaching will be appropriate for them. Thus it seems wise to provide a second track wherein students spend the first two years in course and seminar work and perhaps give specific attention to the problems of teaching. A third year would include supervised teaching, studying the problems of college students and colleges and universities, and giving preliminary thought to a dissertation. The last year would be the dissertation year, with a clear understanding that the range of thesis topics would appropriately be much broader than for the purely research degree. Thus a student aspiring to profess chemistry could do a chemical dissertation, or a dissertation on how to teach recent developments in chemistry, or even a dissertation involving the administration of collegiate chemistry programs. The third orientation is an applied one and quite clearly would be inappropriate for some fields. Yet as business, industry and government expand the range of positions requiring advanced training, the number of fields for which an applied track would be appropriate is also likely to grow. The division of time would be somewhat comparable to the division of time for the teaching track: two years of basic graduate study, one year of internship or work experience, and one year for the completion of a dissertation which probably would be of an applied nature. Thus an economics dissertation could appropriately deal with specific and applied policy implications of economic decisions. Conceivably, and in many cases hopefully, the internship would clearly relate to the subsequent dissertation. One could visualize a graduate student identifying an applied problem early in his internship experience, elaborating the means by which he would study it during the latter part of the internship, and being prepared to move immediately to his research during the fourth year of graduate work.

Elements of Curriculum

Such an organization of the Ph.D. program into alternative tracks implies much more formal classification and organization of the graduate learning experience. It seems axiomatic that not all courses are designed to achieve the same sorts of objectives and that some means is necessary to distinguish between them. For this purpose, any of several sets of categories would be appropriate. One which

was originally designed to establish order within the undergraduate curriculum appears to have distinct possibilities. It contains four elements, each of which would generally consume a fourth of a student's time, although the distribution of time is less important than the attempt to classify as a means of ultimately producing a more symmetrical graduate program. Whether a field is disciplinary and lodged in an orthodox department or interdisciplinary and lodged in an institute or center, common substantive and procedural areas should be mastered by all graduate students. These areas, then, would define a set of common requirements taken by all students during the first two years of graduate study. At least part of these could be required for students seeking only a master's degree, with all of them required for students anticipating a full doctoral program. The second fourth of the doctoral program is the special field of concentration, which very likely would be the dissertation and related work. The concentration on a dissertation should derive out of a context somewhat broader than the thesis study but considerably more specialized than the common requirements. Probably another fourth of the graduate student's time should be spent studying materials clearly viewed as context. Thus, an American Civil War dissertation would be undertaken from the context of course work dealing with that general period of American, European, or even Far Eastern history. A last fourth of the doctoral program would be conceived of as broadening the entire intellectual base of graduate study. Students would use this fourth to elect widely both from within and without the department in which they concentrate. It might even be desirable to consider some provisions which would force students to undertake course work outside a department in fields which have direct relevance for the field of concentration.

Master's Program

Many of the points made in connection with doctoral work could with equal validity be made concerning master's level work. For example, a specified length of time to fulfill requirements should be determined and courses to achieve different sorts of objects should be designed. However, several additional recommendations pertaining exclusively to the master's degree can be made. First, there is no warranted reason why a master's degree should be research-oriented. If the degree is taken as part of a doctoral program, the research orientation will come afterward, and if the degree is a terminal one its purpose should be primarily broadening or concerned with a technical application of a vocational or professional skill. Thus the thesis has no legitimate part in the master's program. Second, the master's

degree should be reestablished as a normal part of doctoral study. Hence the first year should be quite clearly specified and so designed that it could equally serve as a terminus or as a broad base for more specialized work at the doctoral level. However, there should be room in the master's program for a decided problem-centeredness. An important reason why people seek master's degrees is to obtain some understanding and skills which can be applied to solving broad social problems. Hence the master's degree in arts and sciences should probably contain about half work in a prescribed core and about half work which could either be problem-oriented or which could contribute greater depth of understanding as a basis for subsequent doctoral study. If the master's program is designed to develop certain competences needed for the terminal degree or for progression into doctoral work, then the design should be implicit for a final examination which would both signifiy the end of master's level work and serve as a qualifying exam for doctoral work.

Interdisciplinary Work

A curricular structure which makes explicit provision for broadening experiences for graduate students clearly implies great value placed on interdisciplinary work. Increasingly, graduate programs should make such provisions, both for students who need a broader foundation upon which to build a disciplinary concentration and for students concerned with an interdisciplinary problem. A number of devices can be recommended to facilitate interdisciplinary work. For departments to allow or even to require that a certain proportion of graduate work be taken outside a department is probably the simplest device. Clearly, if this is to function effectively, all departments must be willing to accept graduate students from other fields and to make appropriate modifications so that the students would not be penalized for having lacked this, that, or the other specific prerequisite. This is not an extreme posture, for increasingly the validity of specific prerequisites for most subjects can be challenged. But in addition to simply using the interdisciplinary capacity which exists in the full range of courses offered in a university, other more formal devices are at hand. Centers and institutes are providing one form of interdisciplinary work, and institutions might seriously consider expanding their number. In a less formal way, special interdisciplinary committees can be created with relatively little difficulty to serve as advisors and managers of the programs of students who wish a specially contrived interdisciplinary program.

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Relevance

In many ways related to the preceding principles but of a different order is the recommendation that graduate faculties place greater emphasis on providing relevant experiences for graduate students. One gains the impression that graduate programs too frequently have been put together along the single dimension of intellectual experience in courses and seminars. This dimension is by no means invalid. One can argue strongly that students should have the experience of studying different courses with different professors. Indeed, greater variety along this dimension is probably in order, but greater attention to other dimensions of experience could conceivably result in a much richer graduate student career. Just to indicate some possibilities, it can be argued that every graduate student should have some field or clinical experience designed to establish more closely the relationships between academic work and reality and to perfect skills of application. A well-contrived teaching experience is one example; an internship spent in an industrial context, another. In addition, each graduate student should have some experience working as a member of a group focusing on a specific problem As originally conceived, the graduate seminar was intended to do this: the major professor blocked out a domain and each of the students contributed an element to its understanding. Some of the group research within the natural sciences also seems to provide this sort of group experience. Graduate student testimony suggests that for many graduate students the opportunity for a focused group effort is lacking, yet much subsequent professional work requires some expertise in functioning in a group of professionals. Thus, in instances in which group experience is not already available, appropriate situations should be contrived. There can, of course, be some serendipity. The graduate school of education at Stanford in 1971 found its faculty to be somewhat shorthanded because of professors on leave and unforeseen professorial attrition. Graduate students themselves were asked to assume some responsibilities for advising entering graduate students and for maintaining a high graduate student *esprit de corps*. Thus, groups of students have come into existence by concentrating energies on commonly shared problems, with noticeable profit for the entire graduate program and for the development of group skills on the part of the graduate students themselves. This emphasis on the experiential may disturb some graduate faculties who assume responsibility only for the development in students of substantive knowledge. However, it should be stressed that graduate study should contribute to the total

development of an individual and that such development does require specific provision of a variety of relevant activities.

Examinations

The great interest during the late 1960s on the part of students to change grading and examining patterns suggested that existing procedures were grossly inadequate. Commentary of graduate students about the grading and examining they experienced suggests that malfunctioning is not exclusively an undergraduate phenomenon. Hence there is considerable need for regularizing and improving examining procedures. Here it is argued that a graduate program in arts and sciences, like a program in one of the professional fields, should be designed to develop specific competences in students. To do this most expeditiously, the competences should be clearly specified so that graduate students understand what it is they are trying to develop. Examinations, then, should be so constructed as to test whether those competences have indeed been achieved. One obtains the distinct impression that questions on preliminary qualifying or candidacy examinations are intended to find out what students will do with the question. Thus different students could go in quite different directions as they respond to the tasks set for them. Such openness possesses some intriguing elements, but also can contribute to unreliability of assessing student performance and to a great deal of anxiety as the student tries to determine what really is expected of him. Several devices seem appropriate in this regard. First, every department offering graduate work should compile a graduate student manual which would indicate quite specifically at what points examinations would be conducted and what competences students would be expected to display. Then, if professors would make even slight efforts to construct examination questions designed to elicit these competences, the entire process might be made more rational. As a general rule, qualifying examinations have been placed unfortunately late in graduate students' programs with a resultant dilemma. Either student investment in successfully passed courses has given him such an overpowering equity that examining professors are unwilling to allow that equity to be sacrificed, or the faculty is faced with the inconsistency of students performing satisfactorily in courses yet judged incompetent on a reexamination of the competences those courses were intended to develop. It can be argued that the qualifying examination dealing with competences and areas clearly specified in advance should be placed at the end of the first year of graduate study. Once having demonstrated such capacities, students should be relatively free from examinations and should

prepare for the actual professional demands of research, teaching, or application.

Limiting the Curriculum

A prevailing characteristic of college and university curriculum, especially during the 1950s and 1960s, has been enormous proliferation of the number of courses offered. This is to be expected in view of the expanding areas of knowledge. However, courses all too frequently seem to have been added to college catalogs with no particular pattern or plan in mind save that of exposing a professor's own research interest or indicating an emerging parameter of a subject. This casual sort of course proliferation too frequently results in impressive patterns of courses which on closer examination reveal major gaps in what should be basic preparation for graduate students. Departments, centers, or institutes should therefore ask themselves collectively what domains should be available if adequately prepared graduates are to be produced. Such group discussion of a departmental curriculum can quickly reveal serious gaps and can result in all the members of a department assuming a collective responsibility for the curriculum rather than allowing the curriculum to represent primarily the idiosyncratic interests of individual faculty members. This is really asking departments to perform for the graduate curriculum substantially what faculties are asked to do when they ponder and decide general education requirements, graduation requirements, and patterns of courses for undergraduate students. In larger departments it is not asking too much for a curriculum committee to be charged with constant scrutiny of course offerings and to be given some power to recommend substantial changes. This process very likely would reduce substantially the overall number of courses being offered, and this, in turn, might ultimately have implications for the economics of the institution.

Admissions

Admissions processes should be modified, but the precise direction of change is still somewhat vague. James Harvey's recently summarized research of graduate admissions indicates a start:

> Some order and philosophy should be brought to the admitting of students for graduate work. The impression exists that the admissions process on the graduate level is haphazard, if not indeed capricious. It is doubtful that many departments are aware of the limitations of grades or objective tests as predictors. Certainly, most of the departments have not conducted validity studies of these predictors at their institutions. Each graduate school should centralize enough of

the admissions function so that (1) recruitment might be improved; (2) limitations on the information in candidates' folders realized; and (3) follow-up studies of admitted students made. A better understanding of the relationship between admissions criteria and graduate school success might be the result.[1]

From such a limited but still systematic base, problems of how to identify potentiality among minority group members, how to identify potential creativity, and how to identify differential aptitudes for teaching, research, or application would be possible. Larger graduate institutions have considerable psychometric expertise in departments of psychology, sociology, social psychology, and education. These, properly exploited, might help the entire graduate program improve admissions. Such a recommendation implies some presumptuousness on the part of those expert in such matters, but perhaps the time has come when graduate programs can no longer afford undue diffidence on the part of their own relevant expertise.

Improvement of Graduate Instruction

The next recommendation is fraught with even more danger than those previously made. Student commentary suggests that much of the teaching they experience in seminars and graduate courses is far from effective and contributes little to their educational development. If this is so, it would seem reasonable that, just as undergraduate faculties are beginning to attend to the improvement of undergraduate teaching, so graduate faculties should give greater attention to the processes of instruction, guidance, advising, and supervision. Perhaps as a first step departments might begin to accumulate evidence concerning the teaching activities of professors as they are considered for promotion, reappointment, or tenure. Then, too, all professors might be encouraged to make greater use of student evaluation forms, which can be modified to be appropriate for graduate styles of teaching. Occasionally, members of a department might find it instructive and appropriate to engage in discussions of the nature of graduate teaching. If psychiatrists can discuss and change clinical procedures, if seasoned judges can participate in seminars on how to improve the judicial process, so should it be reasonable to expect departments of history, biology or economics to ponder how the various acts of teaching can best be performed.

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[1]James Harvey, "Graduate School Admissions," *College and University Bulletin*, November 15, 1971, pp. 4-5.

Departmentalism

As has been repeatedly stressed, academic departments have been and are at once one of the great strengths and one of the great weaknesses of graduate study. It appears increasingly true that the powers and prerogatives of departments should in some ways be limited. One way which seems plausible is to strengthen the office of graduate dean by assigning him a definite role in the selection of faculty and a review authority for both the administrative details of a graduate program and the curricula developed by departments. If the principle could be accepted that the graduate dean was properly acting when he reviewed course offerings in fields quite different from the one from which he came, and could with propriety question departments concerning gaps or redundancies, this fact alone might produce substantial changes in the patterns of courses. Similarly, with sufficient funds, graduate deans could stimulate departments into creating new courses, including the much needed interdisciplinary sort. Some institutions may achieve the same end (that is, maintain departments in the arts and sciences but still provide for greater responsiveness to broader institutional needs) by providing for divisional deans with considerable influence over appointments, control over budgets, and explicit responsibility for curricular matters. This last responsibility might be discharged through the use of several associate deans, one for undergraduate studies and one for graduate studies. Still other institutions could deliberately foster expansion of the number of institutes and centers which through competition with departments might bring about greater concern for curricular and teaching matters. These suggestions, of course, run counter to the caveats contained in some of the case material describing changes in graduate schools. This suggestion is made deliberately and is based on the belief that departments, in essence seeking primarily to replicate their own members, do require stimulation and pressure from outside to be persuaded to modify additional practice.

Dissertations

While there will be variation according to field, as a general rule the nature of doctoral dissertations should be modified to allow a greater range of appropriate topics and methodology. An appropriate guideline to the range of dissertation effort would be a cataloging of the research and scholarly efforts of the graduate faculty itself. Thus some professors become eminent bibliographers; others spend time on theoretical model-building; others synthesize and interpret the

work of others. Some professors devote their entire careers to producing isolated segments of new knowledge, while other professors deal constantly with broad issues and policy implications. If a given kind of scholarly activity can be judged as appropriate for a professor and become the basis on which he is rewarded, the same kind of activity should be judged appropriate as a dissertation for a graduate student. In the field of history, then, a detailed examination of a specific historical event, a broad, reflective essay on some historical trend, a biography, or even an historical novel should be appropriate. Similarly, in the biological sciences, a tightly controlled experimental study, an evaluative study of industrial uses of biological knowledge, a study on the history of science, or a study involving changed methods of teaching biological science should also be appropriate, for these all are indicative of the range of scholarly and research activities of practicing academicians.

Liberalizing the Program

Just as the professional schools are attempting to broaden the education of their students through incorporating materials from quite divergent subjects, so should graduate departments provide for broadening experiences at the Ph.D. level. If it is appropriate for a school of medicine or agriculture to introduce international dimensions to the curriculum, it would seem wise for doctoral programs in the arts and sciences to add elements of internationalism. If it is wise for a school of law to include more of the contemporary, the arts and sciences might also add contemporary materials. Assuming some validity to the concept of two or more separate cultures within the intellectual world, then there is reason for graduate departments to build bridges between cultures within the graduate program as well. Graduate departments have relied on undergraduate experiences to introduce students to different cultures—a reliance all too frequently misplaced. Thus a graduate student in one of the natural sciences might, with propriety, be encouraged to take some work for graduate credit in the area of the humanities. Conceivably, work in the humanities could throw new and intensive light on perplexities within the science work itself.